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TRANSACTIONS

OF THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

HELD AT PUT-IN-BAY, O., JUNE 18, 19, 20, 1878.

NEW SERIES.

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PREFACE.

THE General Secretary herewith presents the Transactions of the Thirty-First Session of the American Institute of Homœopathy, with an apology for the great delay in publishing; which, however, the Secretary begs leave to inform the Institute, was altogether unavoidable.

The Secretary would call attention to the fact that the Institute, having so amended its By-Laws as to restore the plan of *each bureau selecting a subject for presentation and discussion*, is liable to have the various departments of a single subject presented by several writers; and in view of this, would suggest that more authority be given by the Institute to the Chairmen of bureaus, or to the Committee of Publication, in the matter of publishing the reports and papers of the bureaus; preferably to the Chairmen of bureaus.

The *Complete Code of Medical Ethics* has been printed as an Appendix to the present volume, in accordance with the order of the Institute.

All of which is respectfully submitted:

ROBERT J. MCCLATCHEY,
General Secretary.

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OF THE

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THOMAS MOORE, M.D., Chairman.....PHILADELPHIA.

Committee on Clinical Thermometry of Puerperal Diseases.

HENRY N. GUERNSEY, M.D., Chairman..... .....PHILADELPHIA.

LXI.

PROCEEDINGS

OF THE

THIRTY-FIRST SESSION

OF

THE AMERICAN INSTITUTE OF HOMŒOPATHY.

HELD AT PUT-IN-BAY, O., JUNE 18, 19, 20, 21, 1878.

FIRST DAY.

MORNING SESSION.

THE Institute was called to order at 9.30 o'clock A.M., in the Put-in-Bay House, Put-in-Bay Island, Ohio, by the President, J. C. Burgher, M.D., of Pittsburg, Pa., who announced that the business of the Thirty-first Session of the Institute would be transacted in accordance with the order of business prepared by the Committee of Arrangements.

THE PRESIDENT then delivered the Annual Address, as follows:

PRESIDENT'S ADDRESS.

Fellow-Members of the American Institute of Homœopathy: At the last meeting of the Institute, held at Lake Chautauqua, N. Y., in June, 1877, without solicitation on my own part, I was elected to preside over your deliberations at this session. Although your votes were directly cast for me, I understand full well that they were not intended for me alone, but may be in-

terpreted also as an utterance complimentary to my more immediate colleagues, who have done so much for the advancement of homœopathic therapeutics in the geographical section in which it has been my good fortune to reside. In their behalf, therefore, I tender to you their thanks. As for myself, permit me, without either sanctioning the policy or indorsing the wisdom of your choice, to acknowledge my appreciation of the high honor conferred upon me by your suffrages, and to thank you for this additional expression of your individual confidence and esteem. I trust that harmony will characterize your deliberations, and that they will be such as shall give weight, dignity and influence to your proceedings, and make this session one of the most important in the history of this organization. With the kindest personal feelings and the sincerest professional regards for every member of the Institute, I enter on the responsible duties devolving upon me, and shall endeavor to discharge them faithfully, impartially, and to the best of my ability. In my efforts to preserve order and decorum, and to expedite the business of the session, I may reasonably anticipate your co-operation; I *may* need your indulgence.

The by-laws of the Institute, among other duties, make it obligatory upon the President to "deliver an address at the opening of each session, on the progress of homœopathy during the year past, and make such suggestions as he may deem necessary for the Institute to take action on during the session."

Those of you familiar with the writings of that prince of romancers, Sir Walter Scott, will readily call to mind his pen-picture of Old Mortality, whom he represents as devoting his life to deepening, with his chisel and mallet, the inscriptions on the unpretending tombstones which marked the obscure graves of the whig martyrs of Scotland, who afforded a melancholy subject of history in the times of Charles the Second of England, and his successors. It is not stated in the narrative that Old Mortality originated any devices or that he added anything to the inscriptions. His object seems to have been simply to restore what time had measurably obliterated. I find before me a service not unlike that of this rude Scottish sculptor, except, perhaps, that his task was self-imposed, and mine enjoined. History

is but a "plain unvarnished tale," a narrative of facts, a record of events, and cannot be manufactured to order. The only originality the historian can claim, is his arrangement of facts and his style of expressing them. His "letters patent" are simply those of design or construction of language; the data and materials, like those of science, are the common property of all.

I can neither hope to add to the earnest words of counsel spoken by my distinguished predecessors, nor to improve upon their recommendations and monitions; while the events which have marked the gratifying progress of homœopathy since our last session are as familiar to you as they are to the speaker. The antagonism with which homœopathy was received by the profession, when first announced by its illustrious founder, still continues; but, while the hostility is equally unscrupulous, it is far less general, while many of the more progressive of those nominally classed as allopathists tacitly recognize the law *similia similibus curantur*, and practice largely in accordance with it. Plans of treatment and methods of practice that have been taught and explicitly followed for ages, have been almost completely set aside. Authors and teachers of erudition, long experience, and acknowledged ability, have made shipwreck of their old medical faith, and, on trial, have found, in the use of small doses of homœopathically acting remedies, better results than they have ever obtained from their boasted "heroic treatment." The old school has enriched its pharmacodynamics by our physiological provings, modified its practice by substituting the *small* for the *massive* doses, and in not a few instances employing the single remedy instead of the complex mixture. That our allopathic brethren are indubitably drifting into homœopathy is confirmed by the following admissions of some of their more prominent authors:

Dr. S. W. Wetmore, late professor in the medical department of the University of Worcester, at Cleveland, Ohio, in an address read before the Buffalo Medical Association (allopathic), September 4th, 1877, uses the following language:

"After more than twenty-five years of earnest pupilage in the various departments of our science, I feel that I have but a smattering of each; but this I *do* know, that there is *certainly*

something in homœopathy. As philosophical practitioners, we all treat diseases homœopathically every day without giving it a thought of the homœopathic law. He who ignores a doctrine, a drug, or a remedial measure, without giving it investigation, is unworthy of the name of teacher. It is true, I have been culpable of that which I criticize, but then I was blind; now I see, and have the moral courage to say, *peccavi.* I positively knew nothing of that which I condemned; the measure and cause of my intolerance was my ignorance, as is the case of nineteen-twentieths of the physicians of our school throughout the globe to-day. He must needs be blind in more than one eye, who cannot see that its superstructure is something more than imagination, faith, sugar pills, and delusion. It is seemingly unnecessary to detail the great variety of cases I have treated by the law of similars; that there is *multum in parvo,* though that little be of spectroscopic dimensions, and that these medical infinitesimals hold sway over morbid conditions, administered in accordance with the law *similia similibus curantur,* more satisfactory than remedies given according to the principles of *contraria contrariis curantur.* This result being the product of my own experimentation, I am positive of my deductions."

At a meeting of the New York Medical Journal Association (old school), held June 15th, 1877, S. H. Dessau, M.D., read a paper bearing the title, "The Value of Small and Frequently Repeated Doses," a report of which appeared in the *Philadelphia Medical Times* of July 21st, and was printed in full in the *Medical Record* of July 28th, 1877. It is fair, therefore, to assume, that the sentiments and practice of the author stand indorsed by the profession, so far, at least, as to have been published in leading allopathic journals without comment, and received by the profession without protest. Other allopathic authorities referred to in the essay afford evidences of a similar appreciation of small doses, and, so far, furnish practical recognition of the advanced ground we hold in the domain of therapeutics. Dr. Dessau says his attention was directed to this subject by the admirable work of Sidney Ringer, M.D., entitled, *A Handbook of Therapeutics.* "From the frequency with which Ringer recommends small doses of medicines that we have been

accustomed to use in much larger doses, in entirely different diseases, I was induced to give them a trial." The following homœopathic prescriptions of Dr. Dessau are fair samples of many more which might be quoted from his article, viz.: In the vomiting of infants, due to various causes, he found the Wine of ipecacuanha, in one-drop doses, every hour, of great efficacy. Fowler's solution of arsenic, in the same doses, proved equally serviceable in the vomiting after a debauch, and in the morning vomiting of chronic alcoholism. In a form of bronchitis occurring in children, characterized by loud wheezing and asthmatic breathing, Tartar emetic proved the most efficient remedy. The strength of the solution used was from one to three grains of the drug to one pint of water, and of this solution a teaspoonful was given every hour or so. It was also of great service in bronchial catarrh, in the same doses, especially if accompanied by diarrhœa. In syphilitic cephalalgia, the one-sixtieth of a grain of Calomel, given every hour, acted like magic. In gastro-intestinal catarrhs in children, he used calomel successfully in doses of one-sixtieth of a grain. When the stools were of a mucous character, containing blood or not, Mercurius corrosivus was given with brilliant results, in a solution of the strength of one grain to sixteen ounces of water, a teaspoonful every hour. In retarded menses, one-drop doses of the Fluid extract of ergot was used with success, and Pulsatilla in the same sized doses in dysmenorrhœa. He lauds Aconite tincture, in drop-doses, for reducing the temperature; Belladonna, in facial erysipelas and sore throat; Extract of hamamelis in obstinate epistaxis; and Tincture of cantharides in strangury, in drop-doses, hourly repeated. Sidney Ringer, M.D., the author of the *Handbook of Therapeutics*, referred to by Dr. Dessau, is a prominent member of the dominant school of medicine, and fills the professor's chair of therapeutics in University College, and is physician to the University College Hospital, of London, England. The work was published in London, in 1869, and has passed through six editions. It met with a rapid and extensive sale, both in this country and in Europe. Did time permit, I might give many extracts from the work, which would do no discredit to a treatise on homœopathic therapeutics. In the sixth edition of

this work, issued but a few weeks since, Phosphorus is introduced in these words: "This substance for many years had fallen into disuse, but, owing to its signal success in neuralgia, in the hands of homœopathists, it has again recently risen to favor."

Several prominent homœopathists are named as his authority for the remedial powers of different drugs. Dr. Fleischmann, of Vienna, is given as authority for the employment of *Phosphorus* in pneumonia, and Dr. Hughes for its remedial action in chronic inflammation of the rectum. Drs. Bayes, Brown, and Cooper, of London, are cited as authorities for the use of minute doses of several drugs in a variety of diseases and conditions. It is to be hoped that a future edition of this (to Dr. Dessau, at least) indispensable work will contain more acknowledgments of information obtained at the expense of homœopathists, and that it will meet with the same rapid sale and appreciative reception at the hands of our old-school brethren accorded by them to its predecessors. In the *Medical and Surgical Reporter* of Philadelphia, March 30th, 1878, p. 246 (allopathic to the core), Charles H. Hall, M.D., closes an article on *Corrosive Sublimate* in dysentery in these words: "These cases are taken from my case-book to illustrate the efficacy of *small and frequently repeated doses of Mercury* in this disease. There cannot be any doubt of the success, in the great majority of cases, of this method of treatment. I could furnish records of many more successful cases treated in this manner. My success so far has been very gratifying. Ringer, who advises it in his book, deserves no credit for it except for popularizing it. Any one curious on the subject of his small doses, not only in this disease but in almost every other one of his recommendations, has only to refer to homœopathic works and find that he has plagiarized. Take up any one of their works, even the domestic manuals of twenty-five years ago, and you will find *Corrosive Sublimate* put at the head of the list of remedies in dysentery. Although a regular physician of the *strictest sect*, I believe we should give credit even to irregulars where they deserve it." The recent work of Drs. Burness and Mavor, bearing the title, *The Scientific Action of Drugs on the Healthy System, etc.*, consists of illustrations of the physiological actions of drugs, and their homœopathic applications in what

the authors call "the restorative doses," which, I need hardly say, must have appeared exceedingly small to the old-school physicians. This work received the encomiums of the leading medical journal of Europe, the *British and Foreign Medico-Chirurgical Review*, as both "original and important." The editor of the *Chemist and Druggist*, of London, being more independent of the praise or censure of the profession, and more familiar with the writings of homœopathic authors than his allopathic contemporary, saw from whence was drawn the "original" ideas incorporated in the work, and, in reviewing the book, pronounces it "homœopathy disguised," and adds, "Our theory is paraded with much display in the introductory pages of this book, and, when it is at last exhibited, we find it to be purely and simply the framework of the homœopathic system of medicine." The same may be said of Dr. C. D. F. Phillips's book on *Materia Medica and Therapeutics*, and Dr. John Harley's *Old Vegetable Narcotics*, of recent date. The great importance of these works is, that they have introduced homœopathy to allopathic physicians, whose prejudice has prevented them from examining works avowedly homœopathic. Trousseau, Bartholow, Eustice Smith, and other allopathic authors, mention many other medicinal agents as valuable and reliable in small doses in the treatment of various disorders. One attributes to them a substitutive action; another the physiological action antagonistic to that of the disease; another to differential action, etc. The *Medical Record* of December, 1877, contains a well-written article by Henry G. Piffard, M.D., of New York, in which he recommends the homœopathic formula for preparing triturations in the decimal and centesimal scales, on account of their uniformity, palatability, and the smaller dose required. As another evidence that small doses are gradually superseding large ones in old-school practice, we may instance the general favor with which *gelatin-coated pills* and *parvules* have been adopted by the regular doctors, and their extensive advertisement in their medical journals. A certain New York firm of manufacturing chemists occupies four pages of *Braithwaite's Retrospect* in advertising these preparations. These pills, or parvules, are guaranteed to be of uniform strength, to contain but one

drug, and in the quantities named, as follows: Arsenic, $\frac{1}{100}$ of a grain; Gelsemium, $\frac{1}{50}$ of a grain; Podophyllum, $\frac{1}{40}$ of a grain; Strychnia, $\frac{1}{60}$ of a grain; Tartar emetic, $\frac{1}{100}$ of a grain, etc. I have quoted thus largely from old-school authorities for three reasons: first, to prove, by their own statements, that they now extensively use and recommend small doses, which they heretofore sneered at, ridiculed, and denounced as fraud and humbug; second, to show that the remedies used were given in accordance with the homœopathic law; and, third, that homœopathic physicians have used the same remedies in similar diseases for more than half a century. The remarkable transitions which we have briefly considered are striking proofs of the growing appreciation of the therapeutic principles enunciated by the immortal Hahnemann. The tendency among recent allopathic authors seems to be an effort to absorb or appropriate the much-derided formula, *similia similibus curantur*, without acknowledgment, and to explain, on some pathological theory or sweeping generalization of differential action, the efficiency of small doses, when given according to the homœopathic law. With such contributions to the medical literature of the old school before us, we may congratulate ourselves on the progress homœopathy is making in that direction. The lines which separate the avowed practitioner of homœopathy from those who do not openly acknowledge their faith in it are gradually becoming obliterated. This change is taking place from no diminished confidence in the law of similars, from no distrust in the Hahnemannian method of obtaining a knowledge of the action of drugs, nor from any doubt of the efficiency of infinitesimal doses when prescribed homœopathically on the part of those who advocate these principles, but from the tacit adoption of every one of them by the representative class of that branch of the medical profession which has been the loudest in its denunciations of them, and has repeatedly declared the practice of them a "public fraud," their advocates "ignorant pretenders and unprincipled charlatans."

Having thus briefly traced the progress of homœopathy in the old school, we will now notice some of the evidences of progress in our own. If the literature of a science is any measure of its progress, we have proof of this character most conclusive, grati-

fying, and voluminous. As the scientific and practical character of our book and periodical literature will be presented by the committee on that subject, I merely make mention of it here for the sake of completeness. All our hospitals and dispensaries are in successful operation and in a prosperous condition, as will be shown by the report of the Bureau of Organization, Registration, and Statistics. Our numerous medical societies, State and sectional, have been well attended during the past year, and have furnished many valuable contributions in the various departments of medical science. The accessions to our professional ranks since our last session are three hundred and forty-six graduates from homœopathic colleges, besides an indefinite number of converts from the ranks of the old school. A few years ago, homœopathic physicians were seeking favorable places in which to locate; now desirable fields are awaiting their coming. In supplying the demand for homœopathic physicians, good qualities and superior attainments must be exacted. The standard of medical excellence and moral worth must be inexorably maintained. The sentiment is rapidly and properly gaining favor, that at least four years' study under a reputable preceptor, and three full courses of medical lectures should be required of every one before receiving the degree of M.D. The right to practice the "divine art of healing" should be granted to no one who falls below the standard of moral worth, literary attainments, or scientific acquirements. Our ranks, filled with physicians of culture and refinement, will challenge and receive both the respect and confidence of the public. To secure this, no member of this Institute should allow any one to enter upon the study of medicine under his tuition, until satisfactory evidence is furnished of the moral fitness and literary attainments of the applicant for the profession to which he aspires.

Good qualities and superior attainments, rather than large numbers and inferior acquirements, are to be sought in supplying the demand for homœopathic physicians.

As one of the events of the medical history of the past year, it may be mentioned that women have been accorded professional recognition, heretofore denied to them. They have, in fact, captured several strong medical outposts. The examinations of

women for degrees, in the medical schools of France, Switzerland, England, and in this country, are reported to have been as rigid as those of their male associates, and, as a rule, better withstood. The wards of the Royal Free Hospital of London have been formally opened to women students, with the view of providing them with the necessary clinical instruction, and the same is true of the Homœopathic Hospitals of Boston and Pittsburgh. The Boylston prize essay in this country was won by a woman, the judges being unadvised of the sex of the author until after the award of the prize. Thus women have, with commendable energy and perseverance, surmounted all the barriers to professional recognition.

Even in conservative Europe, a woman can now obtain a full medical education, and secure a registered diploma in Great Britain, entitling her to practice medicine. We have the fullest confidence in their ability, and congratulate them on their success.

I respectfully suggest that the chairmen of the respective bureaus of the Institute be hereafter elected by ballot, a majority of all the votes cast being necessary to a choice, and that the place and time of meeting be also decided in the same way.

In all human affairs a time arrives when joy gives place to sadness. While the therapeutic principles we advocate have been steadily gaining ground, death has removed from our ranks some of our distinguished colleagues, through whose labor this is in some measure due. Among these are numbered Mercy B. Jackson, M.D., of Boston, Mass., the first woman admitted to membership in this Institute; George W. Swazey, M.D., of Springfield, Mass., an ex-president and senior member of the Institute; Jacob Jeanes, M.D., of Philadelphia, Pa., an original member of this organization, ripe in years and full of honors; and Marcellin Côte, M.D., of Pittsburgh, Pa., an early convert to, and able advocate of homœopathy. A biographical sketch of these and other deceased members will appear in the necrological report which will be submitted during this session.

I may as well notice here, as elsewhere (although you are all familiar with the facts), the recent correspondence of Drs. Wyld and Richardson, of London, which was initiated with the view

of uniting the two schools of medicine, which they took upon themselves respectively to represent. Their efforts were not indorsed by either school, as might have been anticipated, and very properly resulted in a "broad farce." With regard to the action of our brethren in New York, following the ripple of excitement in England, to which so much ill-judged prominence has been given, I have but few words to say. I may be excused, I trust, for remarking that their not over-judicious resolutions have not been received with any more favor, elicited any more applause, or resulted to any more advantage to either school than that of the ill-advised concessions of our transatlantic amalgamationists. That both succeeded admirably in conveying very erroneous impressions to the public at large, is evident. Properly understood, their declarations are such as most of us can indorse. There is no disposition in New York, England, or elsewhere, among homœopathists, to yield up their principles, or abate, in the least degree, their well-founded and grounded confidence in the method of therapeutics enunciated by Hahnemann. But, having been misrepresented by the old-school faculty, and thus misunderstood by the public, we are under moral obligations to disabuse the minds of both, by correcting the misstatements on the one hand, and the misconceptions on the other. Having the impression that this is a fit time and occasion to reiterate our principles, to give voice to the belief and practice of the great majority of our profession in this country, I offer the following brief declaration: The homœopathic profession in this country (as elsewhere), without assuming more than is their right, claim to be physicians,—doctors of medicine. The science of medicine includes many branches, viz.: Principally, anatomy, chemistry, physiology, pathology, obstetrics, surgery, and therapeutics. The latter again is divided into general and special therapeutics. In these two divisions are included sanitary therapeutics, or hygiene; chemical therapeutics, relating particularly to neutralizing and disposing of poisons, etc.; mechanical therapeutics, relating to surgery and obstetrics; and finally, the administration of drugs or remedies for the relief and cure of diseases in all of their multiplied varieties and multiform conditions. The entire domain of medical science, and all its collateral branches and sister sciences, are of

vast importance in the practice of medicine, and belong as much to the homœopathic school as they do to any other. Now it is not only clearly the province, but the duty of every homœopathic physician to be familiar with and put in practice every branch of medical science; and yet it is only in the latter (special therapeutics or the administration of medicine) that the question of homœopathy is involved, and it is both a duty and a pleasure to practice in accordance with the principles professed. I believe that I but speak your own sentiments when I declare that in the field of special therapeutics, that is, where internal remedies are applicable, our faith in the homœopathic law is undiminished. Each day's experience confirms us in the belief that it is nature's law of remedial action. While we have inscribed homœopathy on our banner, and adopted for our guide the law *similia similibus curantur* in the selection of our remedies, we exclude nothing, but embrace everything, claiming the right of *every* physician to employ what in his judgment and experience is the very best means to relieve and cure his patients. We accept the teachings of Hahnemann only so far as our experience and observation have proved them to be correct, and reject whatever investigation has shown to be erroneous. His untenable hypotheses form no part of the great truths implied in the comprehensive word HOMŒOPATHY, which enlists every principle in the wide range of medical science, and every fact in the broad realm of observation and experience.

And finally, the American Institute of Homœopathy is a medical republic, national in its character, scientific in its objects, and representative in its membership. It is composed of physicians from all parts of the United States, and admits to its councils accredited delegates from all state and local medical societies, medical institutions, hospitals, asylums, dispensaries, and medical journals conducted in the interest of homœopathic therapeutics and other departments of medical science. It claims for itself absolute liberty in every department of knowledge which pertains to medical science and art. All that is required of candidates for membership is satisfactory evidence that the applicant has pursued a regular course of medical studies, according to the requirements of existing institutions of this coun-

try, backed by a good moral character and professional standing. No creed or confession of belief is required of its members, further than the tacit consent given by becoming a member, to advance its objects, and to comply with its established code of medical ethics, which neither enjoins nor forbids anything touching the practice of medicine, but leaves to the physician unrestricted liberty in the uncertain matters of medical opinion and practice. All engrafted side issues or favorite theories concerning matters of secondary importance are left to the individual, recognizing only the vital fact that we should be *true* physicians. Should emergencies arise which seem to us to demand a departure from the possible limitations of the homœopathic law, owing either to the imperfect state of the *Materia Medica*, or our limited knowledge of it, we should do it openly, honestly, and fearlessly, by fairly stating the case, and claiming the right to treat our patients in the way that, under the circumstances, in our judgment, best meets the case. This liberty, however, is not license. The physician who habitually prescribes large doses of quinine, or other drugs, gives opiates in alternation with a homœopathic remedy, or administers emetics or cathartics in other than very exceptional cases, cannot be consistently regarded as a homœopathician, whatever his pretensions. Homœopathy is essentially a curative method of treatment; where fatal disorganization is present, it can, of course, only palliate. Even in cases strictly surgical, the value of the carefully selected homœopathic remedy can hardly be over-estimated. The size of the dose does not in any sense make the prescription homœopathic. Experience, however, has convinced all who have sufficiently investigated the subject, that when a drug is given that acts on the system in a similar manner to the disease present, or, in other words, is homœopathic to the case, a comparatively small dose is absolutely demanded to insure a prompt curative effect without producing an aggravation of the disease. The distinctive feature of homœopathy consists in the employment of remedies according to the law of *similars*. This is the true basis, the cornerstone, which constitutes the essential difference between it and all other methods of treatment. The law which guides in the selection of the remedy is, as before stated, independent of the question.

of dose—of the difference between the realists, who give comparatively large doses, and of the transcendentalists, who advocate very high dilutions. It is not in the nature of things that a law explaining and connecting a series of facts can long be ignored. Never in the history of medicine in this country was there a time when the cardinal principles we advocate were so well received as now, not only by the public but by the profession. The word homœopathy is, perhaps, to many, no welcome sound, but the facts which that word expresses are received with a cordiality truly gratifying. Although the scientific practice of homœopathy is probably limited to about one-eighth of the entire medical profession of this country, it empirically pervades the entire practice of medicine. In every direction the principles we advocate are covertly incorporated into standard allopathic works, and, amid many fruitless efforts to conceal the facts, are largely taught in an empirical way in allopathic medical schools.

Based on the therapeutic principles which differentiate it from all other methods of treatment, its open advocates have been professionally ostracized by the dominant school, although receiving their titles from the same authority. The old-school channels of periodical literature, societies, hospitals, and dispensaries having been closed against us, we have been compelled to establish medical schools in which to teach homœopathy, publish medical literature in elucidation of its principles, organize medical societies in its interests, and establish hospitals and dispensaries where the poor might receive the benefits of this therapeutic method; and thus have we been *forced* to assume, by way of distinction, a seemingly sectarian name or form. Under this ban, if ban it be, we propose to pursue the even tenor of our way, until all distinctions of schools and methods shall have been effectually ground to powder between the upper and the nether millstones of the *high* and the *low* potencies.

B. W. JAMES, M.D., of Philadelphia, moved, and it was carried, that a committee of three be appointed to take into consideration certain points in the President's address, and report thereon to the Institute.

DR. JAMES referred to the death of Dr. Jacob Jeanes, of

Philadelphia, which had not been mentioned by the President in his address, and trusted he would make a note of it.

THE GENERAL SECRETARY appointed this committee, as follows: B. W. James, M.D., Philadelphia; R. Ludlam, M.D., Chicago, Ill.; T. P. Wilson, M.D., Cincinnati, O.

Dr. Ludlam declining to serve, Dr. N. F. Cooke, of Chicago, was appointed, at the suggestion of Dr. Ludlam.

On motion of Dr. Thomas Moore, of Germantown, Philadelphia, a vote of thanks was tendered the President for his address.

THE PRESIDENT then appointed the following

AUDITING COMMITTEE.

I. T. TALBOT, M.D., Boston, Mass.
E. C. FRANKLIN, M.D., St. Louis, Mo.
C. PEARSON, M.D., Washington, D. C.

THE PRESIDENT: The report of the Committee on Publication is next in order.

R. J. MCCLATCHEY, M.D., of Philadelphia, *General Secretary*, then presented the report of the

COMMITTEE OF PUBLICATION.

Your Committee of Publication would report, that in conformity with the wishes of the Institute, and its action taken at the thirtieth session looking to the "speedy publication of the *Transactions*," the Secretary reports that he issued the Proceedings of the thirtieth session, being a volume of nearly eight hundred pages, within three months after the meeting, and mailed copies to members entitled to receive the same. Indeed, the volume was ready for the final work of the binder by the 20th of September, 1877, and the slight delay was occasioned by the failure on the part of the lithographer of Chicago who had in hand the preparation of the plates to accompany the valuable paper on Clinical Thermometry, by Professor Ludlam, of Chicago.

In regard to the volumes of the Transactions of the World's Homœopathic Convention, of 1876, the Secretary reports, that while at the last session he made the statement in good faith, and with a full belief in his ability to accomplish what he purposed, that he expected to issue both volumes within the space of four months after the meeting, he was not, from a variety of causes, all of which were beyond his control, able to accomplish his purpose. These causes may be stated to have been, principally, the necessity of giving his personal and undivided attention to the getting out of the Transactions

of the Chautauqua session, in the prescribed time, three months after the session; his mistaken idea as to the magnitude of the work to be accomplished, before the volumes could issue from the press in such shape and condition as would comport with the dignity of the Institute, the importance of the publication, and the character of the recent publications of this Association; and the disability of the Secretary, on account of an affection of the eyes, which prevented him applying himself to literary work as usual. The Secretary, however, reports, that having secured the services of a literary medical man to do the work under his supervision, at his own expense, while the Secretary was unable to do it himself, and having secured the services of the same person for the coming year, he is now able to state positively, that within the period of six months from the adjournment of this session, at the farthest, he will issue to all persons entitled to receive them, the two volumes of the Transactions of the World's Homœopathic Convention, in two handsomely printed and bound volumes, and the Transactions of the present session in the usual style, within three months, and that it may be possible to present the first-named volumes within four months after the adjournment of the session.

ROBERT J. MCCLATCHEY,
General Secretary.

On motion the report was accepted.

THE PRESIDENT: The next business in order will be the

REPORT OF THE TREASURER.

E. M. KELLOGG, M.D., of New York, *Treasurer*, then presented his annual report, which was, on motion, referred to the *Auditing Committee.*

F. R. MCMANUS, M.D., the *Chairman of the Board of Censors*, then made the following remarks:

Mr. President: The Board of Censors have taken no action upon the applications for membership as yet, but the plan for the past few years has been to announce the names of all applicants, the colleges from which they graduated, and the names of those who have signed their applications, in order that any member present may have opportunity to object to any application, if he desires to do so. I consider the work conducted through the Board of Censors of paramount importance. Too much care cannot be taken in the selection of our associates, in regard to their good moral and professional standing and ability.

Dr. McManus then called the attention of the Institute to the

By-Laws relating to the admission of members, saying that the Board of Censors accepted applications on the guarantee of the three members signing the application, and that on these signers rested the responsibility of recommending any physician not properly qualified to join the Institute.

The names of the applicants were then read, the Doctor again requesting any one having objections to any applicant to state them.

The Secretary then read a synopsis of the

NECROLOGICAL REPORT,

Prepared by HENRY D. PAINE, M.D., of New York, *Necrologist.*

The report was, on motion, accepted and referred to the Committee of Publication.

JACOB JEANES, M.D.

F. R. MCMANUS, M.D., of Baltimore, then arose and said:

Mr. President: This morning I learned, for the first time, of the death of the lamented JACOB JEANES, M.D., of Philadelphia. I was honored by that man at the early formation of this Institute, now thirty-four years ago, by his introducing me as his son, although I was related to him by no natural ties. For many years we worked together in the Board of Censors and in other ways, and it was a pleasure to me to call him "Father Jeanes." He was a plain, unostentatious man, a profound scholar, a thorough gentleman, and a skilful physician. I know of no one, in all the circle of my medical and social acquaintance, to whom so much regard is due for depth of wisdom and profundity of medical research.

Would that time permitted me to offer a more fitting tribute to the memory of this good man; but I can only unite with my fellow-members in believing that he is now receiving the benediction of heaven.

R. J. McCLATCHEY, M.D., of Philadelphia. Dr. Jeanes was such a man that his death should not be passed over in this Institute with a few words only. There is here present a gentleman who was for several years his intimate friend, and his attending physician during his last illness: a man whom he loved and who loved him well. I trust that the Institute will listen to some remarks from Dr. Korndœrfer, of Philadelphia.

AUGUSTUS KORNDŒRFER, M.D., of Philadelphia, then said:

Mr. President, Ladies and Gentlemen: It became my painful duty, during the latter part of last year, to attend Dr. Jeanes in his last illness. For years we held almost the relationship of father and son; at no time did I ever know him to fail as a friend. In his life, which was beautiful, he was faithful to the utmost.

As a homœopathic physician, I had always known him to be in all things conscientious; as a medical observer he had few equals; his carefulness in relation to everything he did connected with homœopathy was unequalled.

About three years ago came the beginning of the end of his life. For many years he had been a sufferer from diabetes; but he was finally stricken down with senile gangrene, from which after about three months of attention he recovered; and he then frequently remarked to me that he felt like a new man, being so much better. During that attack he suffered from an apoplectic condition, which, however, afterwards entirely subsided.

The evening of the day of his fatal attack was spent by him in comfort, health, and the best of spirits. Among the last words he spake were words of affection to his wife—words of cheerfulness and of hearty comfort.

He retired, fell asleep, and his wife awoke to find him unconscious. He never spoke again; the stupor became complete; he lingered a few hours and then went to his reward. His was one of the most conscientious of lives, and in his death his earnest wish was gratified.

In one of his last conversations with those he loved, he expressed a wish that he should not be compelled to drag out a useless old age. He said: "While I am of use I wish to live,

but when my time of usefulness is gone I wish to die, and to die quickly, that I may give no trouble to those whom I leave."

His whole desire was to do good to others, and that even his death might not be a burden to any one; that he might pass from the world without much attention. His great anxiety in regard to speaking in our medical meetings and in writing for our journals was, lest people might think he craved notoriety. His greatest fear was that too much might be said about what he did. None of his invaluable observations went into print through his own direct agency. They were freely given in the meetings of our Society, and it was thus that we became possessed of his many provings. I have the manuscript of his provings made during a period of forty years, and in that book one can read the whole life of Dr. Jeanes.

The care given to every noted symptom, and the thought evidenced throughout the work, indicates the true man, the true homœopathist, and the conscientious worker for the good of his fellow-men. At the time of his decease he was seventy-eight years of age; he was born October 4th, 1800, and died December 19th, 1877.

THE PRESIDENT: The next business in order will be the presentation of the report and papers of the

BUREAU OF MATERIA MEDICA, PHARMACY, AND PROVINGS.

DR. C. WESSELHŒFT, of Boston, Chairman of the Bureau, reported that soon after the meeting of last year he had opened a correspondence with all members of the bureau, that none of the members were present at the last meeting but himself, and therefore all business had to be transacted by post. On this account it was difficult to conform to the rule of the Institute regarding a special report for discussion. He announced that the following papers were in possession of the bureau:

Microscopic Examination of Triturated Metals, and other

hard insoluble substances; by C. WESSELHŒFT, M.D., of Boston, Mass. (Section II, Art. V.)

A Proving of the Nitrate of Sanguinaria; by WM. OWENS, M.D., of Cincinnati, O. (Section II, Art. IX.)

The Relative Efficiency of the Dilutions and the Triturations; by LEWIS SHERMAN, M.D., Milwaukee, Wis. (Section II, Art. VI.)

A Proving of Phallus Impedicus; by LEVI W. FLAGG, M.D., of Yonkers, N. Y.

Idiosyncrasy in Relation to Medicines; by E. M. HALE, M.D., of Chicago. (Section II, Art. VII.)

Diverse Drug Action; by GEORGE M. OCKFORD, M.D., of Indianapolis, Ind. (Section II, Art. VIII.)

Dr. C. Wesselhœft then read a synopsis of his paper on *The Microscopic Examination of Triturated Metals, and other hard insoluble substances.*

DR. WM. OWENS read a synopsis of his paper on a *Proving of Sanguinaria.*

Dr. Lewis Sherman also presented his paper on the *Relative Efficiency of the Dilutions and the Triturations* by synopsis.

The remaining papers of the bureau were presented by title, whereupon,

On motion, all the papers were received and referred to the Committee of Publication.

THE PRESIDENT announced that the papers were open for discussion.

The papers were then discussed at length, and on motion of DR. S. R. BECKWITH, it was decided to continue the discussion in a sectional meeting of the Bureau of Materia Medica, to be held in the afternoon. (See Section II, Appendix.)

On motion the bureau was declared closed.

J. P. DAKE, M.D., of Nashville, Tenn., was then appointed Chairman of the Bureau of Materia Medica, etc., for the ensuing year.

THE PRESIDENT then announced that as the Committee on Credentials was abolished at the last meeting, delegates from Institutions or Societies should hand their credentials to the Bureau

of Organization, Registration and Statistics, which was empowered to receive them.

On motion, Dr. B. W. James, Chairman of the Committee on the President's Address, reported that the committee heartily approved of its publication.

They also recommended the adoption of the following resolutions:

Resolved, That the President of the Institute shall select the chairmen of the respective bureaus, and shall announce the name of each immediately at the close of the report of each bureau, and that each chairman so named shall, according to the present custom, appoint his fellow-members for the year.

Resolved, That the place of holding the annual meeting shall, after the nomination of localities is closed, be decided by ballot, the one having the majority of votes being selected.

(Signed) B. W. JAMES, M D.,
T. P. WILSON, M.D.,
N. F. COOKE, M.D.

On motion of Dr. I. T. Talbot, the second resolution was amended, and the report was then adopted as amended.

On motion the Committee was discharged.

Dr. T. P. Wilson then announced that THE AMERICAN HOMŒOPATHIC OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY, organized at Chautauqua Lake, would hold its first session on Tuesday, at two o'clock P.M., at a time when the Institute would not be in session, and invited all members to be present.

The Institute then adjourned, to meet at eight o'clock in the evening.

EVENING SESSION.

The Institute was called to order at eight o'clock, by the President, pursuant to adjournment.

THE PRESIDENT: The first business in order this evening will be the presentation of the report and papers of the

BUREAU OF SANITARY SCIENCE, CLIMATOLOGY AND HYGIENE.

As Dr. D. H. Beckwith, of Cleveland, chairman of the bureau

is not present, Dr. B. W. James, of Philadelphia, who has the papers, will act as chairman.

B. W. JAMES, M.D., of Philadelphia, then presented the report and papers of the bureau. The papers were as follows:

Sanitary Science; by T. S. VERDI, M.D., of Washington, D.C. (Section XIII, Art. VII.)

The Hygienic Prevention of Zymotic Diseases; by THOMAS MOORE, M.D., of Germantown, Pa. (Section XIII, Art. VIII.)

Climatology of the State of New York; by A. R. WRIGHT, M.D., of Buffalo, N. Y. (Section XIII, Art. XI.)

Climatology of American Health Resorts; by B. W. JAMES, M.D., of Philadelphia. (Section XIII, Art. X.)

The Ventilation of our Homes; by D. H. BECKWITH, M.D., of Cleveland, O. (Section XIII, Art. IX.)

Village Drainage; by L. D. MORSE, M.D., of Memphis, Tenn. (Section XIII, Art. XII.)

Dr. T. S. VERDI then read his paper on *Sanitary Science.*

DR. THOMAS MOORE, of Germantown, Pa., then read his paper on *The Hygienic Prevention of Zymotic Diseases.*

DR. I. T. TALBOT: I rise to a point of order. There is a standing resolution to the effect that no longer time than fifteen minutes shall be occupied in the reading of a paper, and that papers too lengthy to be read in that time shall be presented by synopsis and referred to the Committee of Publication. Now while these papers are very interesting, they occupy too much time, and interfere with the business of the other bureaus, thus doing them an injustice.

THE PRESIDENT: I wish to inform Dr. Talbot that such has been my ruling throughout, but the Institute has overruled me from time to time.

DR. TALBOT: I did not rise to stop any one in the reading of a paper, but I think that our rules should be adhered to, and that papers requiring more than fifteen minutes in the reading should be read by abstract. I mention this point that it may be considered in reading future papers. The papers are afterwards printed in full, and can be read at leisure by every member.

DR. B. W. JAMES: There is still a paper on Sanitary Science, and one on Hygiene, and also one on Climatology, and although

the latter paper will not be read in full, Dr. Wright, its author, desires to make a brief statement of its contents, upon which he has been working for years, and which is very interesting. I also have a paper on Climatology, which I will present as briefly as possible.

DR. A. R. WRIGHT, of Buffalo, N. Y., then read a synopsis of his paper on the *Climatology of the State of New York.*

DR. B. W. JAMES, of Philadelphia, read a synopsis of his paper on the *Climatology of American Health Resorts.*

DR. N. F. COOKE, of Chicago: I wish merely to say a word on the paper of Dr. Verdi. We all know that Dr. Verdi stands very high as a representative man in Sanitary Science, and that he has devoted many years to the study of the subject. His paper possesses peculiar interest, inasmuch as it deals only with facts. It is of the utmost importance, and if we follow its recommendations we shall prevent sickness in many cases.

I remember reading when a boy that Mahomet Ali Pasha closed a swamp in the midst of Cairo, in Egypt, and by a splendid system of sewerage stopped the plague. Dr. Verdi has spoken of the same matter in his paper. Now, Mr. President, I move that Dr. Verdi's address be printed on slips and distributed to the medical journals in advance of the publication of the *Transactions.*

THE PRESIDENT: The Chair must decide the motion to be not in order, as the papers of the Institute can only be published with the *Transactions.*

A. KORNDŒRFER, M.D., of Philadelphia: In reference to the use of prophylactics and disinfectants in disease, I wish to say, that during the epidemic of small-pox in Philadelphia some years ago, being led to examine the saliva of every patient treated, I found a marked change in the amount of cyanogen present. I was then led to use the Cyanide of potassium as a disinfectant, my rule being to take about ten grains of the Cyanide and dissolve it in two ounces of distilled water, and to sprinkle this through the house at each daily visit. I used from four to six ounces of this strength daily, beginning in December, in the height of the epidemic, when it had still five months to run. From the time I began its use I had no second case in any house,

although when I treated the disease prior to its use I had as high as six cases in a single family. I also noticed that in the silver-plating establishments where the Cyanide of potassium was freely used not a single workman had the disease.

DR. VERDI: I wish to apologize for having written a long paper, and I hope I shall never allow myself the privilege of writing such another. It is not a pleasant fact that after a gentleman has received the permission of the Institute to read a paper, he is stopped when about half way through with it. For my own part, I am always very willing to listen to discussions, and to hear the expression of the views of other members. This morning, although our bureau was due, we allowed the gentlemen who felt interested in spiritualism, mesmerism and other isms to talk as long as they pleased, and we were willing to postpone the presentation of our bureau report and papers until this afternoon. The subject of Sanitary Science, Mr. President, is very important, and cannot be disposed of in fifteen minutes. I assure you that I will write no paper that can be read in fifteen minutes. If the Institute does not offer encouragement to the members of its bureaus to write carefully prepared and well-considered papers on scientific subjects, it will soon arrive at the condition of having no papers of value presented at its sessions, on any subject. You cannot expect to confine a man's thoughts, and the expression of his views in a paper, by a cast-iron rule of not allowing him more than fifteen minutes in which to read his essay.

DR. J. P. DAKE, of Nashville, Tenn.: Mr. President, I wish in justice to myself to say that although I interrupted Dr. Verdi after he had passed far beyond the allotted fifteen minutes in reading his paper, it was, nevertheless, very interesting to me, and that I fully recognized its merits and appreciated its subject, and was desirous of having a full and free discussion of the subject by the Institute; but after the reading of the paper had continued for nearly an hour, I thought that if there was more of it, it would be better to refer it, as after it was printed we could understand its excellence so much better; and I knew also that there were other papers in waiting, and that there would be no time for discussion. Now for what purpose do we come here? Would it not be as well to publish these papers in the journals as to

present them to the Institute, if there is to be no discussion or comparison of views upon their subjects? It is understood that we come here to meet each other face to face, to compare notes, to bring out, by discussion, points never reached in writing.

If there is to be simply a presentation of papers, of such number and length as to admit of no discussion, let them be put into the journals, and thus be given to the profession. There is a rule of the Institute which for several years we have been adhering to, and that is to limit each bureau to one subject for presentation, and that all the papers presented by that bureau shall be on the subject selected by that bureau. When this was done, we had time to discuss a bureau's report satisfactorily. This has been beautifully illustrated. At the Cleveland meeting the papers presented by the Bureau of Surgery equalled our best text-books; they were finished and scholarly, and were worth preserving as a positive addition to our literature. The Institute last year repealed that excellent rule, and allowed the members of bureaus to present papers upon any subject. The consequence is that we are overwhelmed with papers, and the desire of members to read their own productions at length will soon become a cause of continual quarrel. Were it not for my desire to see good rules observed, I would never have said a word to disturb my friend, Dr. Verdi, for whom I have the greatest respect, and in whose paper I take the greatest interest.

DR. I. T. TALBOT, of Boston: Mr. President: I look upon the last two speeches as not strictly in order. I desire to set myself right before the Institute in this matter.

I had no reference whatever to either of the gentlemen who read lengthy papers, and I think I stated that their papers were of extreme value. I understand the annoyance of an interruption. I like best, however, the plan of my friend Dr. Wright, who presented a *résumé* of his paper, knowing that we should see it in full in print.

It is to be hoped that this plan will be followed throughout the remainder of this session. Treat all alike. I trust neither Dr. Verdi nor any one else will consider my remarks as personal, as I only brought the subject up for the purpose of seeing a standing resolution enforced.

DR. S. R. BECKWITH, of Cincinnati: As the Bureau of Surgery comes on in the morning, and as it does not wish to disturb any other bureau, I move that the Institute divides into sections and adjourns to separate rooms.

THE PRESIDENT: I think we meet as an Institute and not as the Bureau of Surgery, and the motion is ruled out of order.

THE SECRETARY: The members of the Institute can meet in sectional meetings, when the Institute is not in session. This is in accordance with the rules.

DR. BECKWITH: Can not this Institute vote to permit any special bureau to adjourn to another room, or must the bureaus meet in general meeting?

THE PRESIDENT: I think the motion cannot be entertained.

On motion, the papers of the Bureau of Climatology were accepted and referred to the Committee of Publication, and the bureau was declared closed.

DR. B. W. JAMES, of Philadelphia, was appointed by the President, Chairman of the Bureau of General Sanitary Science, Climatology and Hygiene, for the ensuing year.

On motion, it was decided to hold an afternoon session of the Institute at three o'clock.

THE PRESIDENT: The next business in order will be the report of the

BUREAU OF CLINICAL MEDICINE.

PHILO G. VALENTINE, M.D., of St. Louis, Chairman of the Bureau: Mr. President, the papers which I have to present are as follows:

The Theory of the Production of Diabetes; by W. N. GRISWOLD, M.D., of San Francisco. (Section III, Art. LXXI.)

Catarrho-Malarial Fever; by L. D. MORSE, M.D., of Memphis, Tenn. (Section III, Art. LXVIII.)

Addison's Disease, with a Clinical Case; by J. S. MITCHELL, M.D., of Chicago. (Section III, Art. LXX.)

Clinical Cases, with Remarks; by C. PEARSON, M.D., of Washington, D. C. (Section III, Art. LXXII.)

Auscultation in Laryngeal Diseases; by P. G. VALENTINE, M.D., of St. Louis. (Section III, Art. LXIX.)

A Cold, its Nature, Conditions, Results, and Treatment; by B. F. DAKE, M.D., of Pittsburgh, Pa. (Section III, Art. LXVII.)

Earth as a Topical Dressing in Skin Diseases; by D. T. ABELL, M.D., of Sedalia, Mo.

On motion of Dr. I. T. TALBOT, the further consideration of the papers of this bureau was postponed until the morning session.

THE SECRETARY: Mr. President, I have reports from the following committees:

On *Medical Literature*, of which DR. BUCK, of Cincinnati, is chairman; on *A Homœopathic Dispensatory*, of which DR. T. F. ALLEN, of New York, is chairman; and on *Foreign Correspondence*, of which DR. C. H. BACON, of New York, is chairman.

These reports are all quite brief, and will occupy but a few minutes for their disposal. If it is the pleasure of the Institute, I will present them, in the absence of the several chairmen.

No objection being made, the report of the

Committee on Medical Literature,

by J. D. BUCK, M.D., of Cincinnati, was read, accepted, and referred. (Section I, Art. LXIV.)

THE SECRETARY: The report from the

Committee on Foreign Correspondence,

is simply to the effect that no foreign correspondence had taken place within the past year, worthy of being reported to the Institute.

On motion the report was accepted and referred.

THE PRESIDENT then appointed DR. J. D. BUCK, chairman of the *Committee on Medical Literature*, and DR. GEORGE E. SHIPMAN, of Chicago, chairman of the *Committee on Foreign Correspondence*, for the ensuing year.

THE SECRETARY: The report of the

Committee on A Homœopathic Dispensatory,

as communicated by Dr. T. F. Allen, of New York, who became chairman by the death of Dr. Carroll Dunham, is to the effect

that being unable to obtain possession of the papers belonging to the committee, he has no report to make, and wishes to be excused from further duty.

I would remark, Mr. President, that this is a special committee, appointed for a special work. I think it would be well for the Institute to accept the report just made, without reference to the chairmanship of the committee, especially as its work is almost completed.

The report was accepted and the committee was continued.

The Institute then adjourned, to meet at nine o'clock on Wednesday morning.

SECOND DAY.

MORNING SESSION.

The Institute was called to order at 9 o'clock by the President.

The Secretary presented the resignation of DRS. W. H. COOK, of Carlisle, Pa.; EDWARD CARLTON, of New York, and H. C. CLAPP, of Boston.

On motion, these resignations were accepted.

THE PRESIDENT: The first business in order will be the continuation of the report of the

BUREAU OF CLINICAL MEDICINE.

B. F. DAKE, M.D., of Pittsburgh, Pa., then read his paper entitled *A Cold, its Nature, Course, Results, and Treatment.*

CLEMENT PEARSON, M.D., of Washington, D. C., read his paper entitled *Clinical Cases, with Remarks.*

J. S. MITCHELL, M.D., of Chicago, then read his paper entitled *Addison's Disease, with a Clinical Case.*

DR. VALENTINE announced that these were all the papers of the bureau to be read before the Institute. He stated that DR. S. LILIENTHAL, of New York, had prepared a paper on *The Nervous Origin of Skin Diseases,* but he had not received it as chairman of the bureau, although he had been asked to present

the paper and have it incorporated with the report of the bureau.*

On motion, all the papers of the bureau were accepted and referred to the Committee of Publication.

DR. F. R. MCMANUS, of Baltimore, *Chairman of the Board of Censors*, then presented a report from the Board, containing the names of a number of applicants for membership, who were, on recommendation, elected to membership. (See *Complete Report of the Board of Censors.*)

THE PRESIDENT: The subjects presented by the Bureau of Clinical Medicine are now open for discussion. The speakers will be limited to five minutes each.

The papers were then discussed, after which, on motion, the bureau was declared closed. (Section III, Appendix.)

The President then appointed CLEMENT PEARSON, M.D., of Washington, D. C., *Chairman of the Bureau of Clinical Medicine* for the ensuing year.

DR. C. H. VILAS, of Chicago, Ill., was, on motion, appointed a *Delegate to the World's Homœopathic Convention*, soon to meet in Paris, and the Secretary was instructed to furnish him with the necessary credentials.

On motion, a recess of five minutes was taken.

THE PRESIDENT: The next business in order will be the presentation of the report and papers of the

BUREAU OF SURGERY.

DR. J. H. MCCLELLAND, of Pittsburgh, Pa., Chairman of the Bureau:

Mr. President and Gentlemen: I have the honor to present a series of papers upon the general subject of *Tumors*, which papers are as follows:

Tumors: Their Nature and Relation to the General Organism; by J. H. MCCLELLAND, M.D., of Pittsburgh, Pa. (Section V, Art. XXIII.)

Papillomata, Adenomata and Myxomata; by L. H. WILLARD, M.D., of Allegheny City, Pa. (Section V, Art. XXVI.)

* This paper was not received by the General Secretary.

Fibromata and Myomata; by G. A. HALL, M.D., of Chicago. (Section V, Art. XXV.)

Neuromata; by M. O. TERRY, M.D., of Utica, N. Y. (Section V, Art. XXVII.)

Lipomata and Angeiomata; by J. E. JAMES, M.D., of Philadelphia. (Section V, Art. XXVIII.)

Enchondromata and Osteomata; by N. SCHNEIDER, M.D., of Cleveland.*

Fibro-cystic Tumors; by S. R. BECKWITH, M.D., of Cincinnati.†

Carcinomata; by E. C. FRANKLIN, M.D., of St. Louis.‡

Sarcomata; by W. H. WINSLOW, M.D., of Pittsburgh, Pa. (Section V, Art. XXIV.)

The Homœopathic Treatment of Tumors; by J. G. GILCHRIST, M.D., of Detroit, Mich. (Section V, Art. XXIX.)

I think the thanks of the Institute are due to Dr. Winslow, as the member of the Institute to whom the Sarcomata were assigned failing to report, the Doctor prepared a paper on that important subject in a very few days.

DR. G. A. HALL then read his paper on *Fibromata and Myomata.*

DR. S. R. BECKWITH read his paper on *Fibro-cystic Tumors.*

DR. E. C. FRANKLIN read his paper on the *Carcinomata.*

DR. W. H. WINSLOW then read his paper on the *Sarcomata.*

On motion the further business of the bureau was postponed until the afternoon.

DR. MCMANUS presented a partial report of the Board of Censors, which was accepted and the applicants for membership elected. (See *Complete Report of the Board of Censors.*)

DR. MCCLELLAND announced a *Microscopical Exhibition,* illustrating the tissues of various tumors, in a sectional meeting of the bureau.

The Institute then adjourned, to meet at 3 o'clock in the afternoon.

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* Received only in brief synopsis. GEN. SEC.

† Not received. GEN. SEC.

‡ Not received. GEN. SEC.

AFTERNOON SESSION.

The Institute was called to order by the President, pursuant to adjournment.

THE PRESIDENT: The first business in order will be the continuation of the business of the

BUREAU OF SURGERY.

DR. J. G. GILCHRIST, of Detroit, Mich., then read his paper entitled *The Homœopathic Treatment of Tumors.*

A synopsis of the paper by DR. N. SCHNEIDER, of Cleveland, on *Enchondromata and Osteomata,* was then read by DR. McCLELLAND, Dr. Schneider being absent.

DR. J. E. JAMES, of Philadelphia, then read his paper on *Lipomata and Angeiomata.*

On motion the papers of the bureau were accepted and referred to the Committee of Publication.

THE PRESIDENT: The papers presented by this bureau are now before you for discussion.

After some discussion, on motion the bureau was declared closed. (See Section V, Appendix.)

The President appointed GEORGE A. HALL, M.D., of Chicago, *Chairman of the Bureau of Surgery* for the ensuing year.

DR. McCLELLAND announced that a number of specimens of various tumors under the microscope were on exhibition for the inspection of members.

J. P. DAKE, M.D., of Nashville, Tenn., presented the following, being the report of a special committee appointed at the session of 1876, to report upon the appearance of the name of GEORGE E. SHIPMAN, M.D., of Chicago, upon the roll of Senior Members of the Institute:

MR. PRESIDENT: Your committee, appointed at the session of 1876, to consider the appearance of the name of George E. Shipman, M.D., upon the roll of Senior Members, begs leave to report as follows:

We have investigated the facts in the case and find that, at the session of 1875, by request of the Senior Members and upon motion of Dr. Carroll Dunham, the following resolution was adopted:

Resolved, That in consideration of the valuable services rendered by George E. Shipman, M.D., of Chicago, to Homœopathy and to the American Institute of Homœopathy, he be constituted a member of the Corps of Seniors.

An hour later in the session the attention of the President was called to the fact that the resolution adopted in reference to Dr. Shipman, had been passed in violation of Section 5, of Article V, of the By-laws, which states definitely how a member of the Institute may become a member of the Corps of Seniors, viz., by the maintenance of twenty-five consecutive years of ordinary membership in the Institute. The President at once ruled, and his ruling was acquiesced in by the Institute, that the resolution was out of order, and the action had thereupon must be considered null and void.

At the following session, in 1876, the attention of the Institute was called to the fact that the name of Dr. Shipman had been placed upon the roll of Senior Members. The Secretary stated that he had no minute of the ruling of the President, rendering the resolution referred to null and void, and had, therefore, been governed by the sentiment of the resolution as adopted.

After some discussion the whole matter was referred to this committee, with instructions to inquire and report at the session of 1877.

Not being prepared to report at the time specified, and being continued by vote of the Institute, we now beg leave to state:

1. That Section 5, Article V, of the By-laws not having been suspended, and Dr. Shipman having been a member of the Institute for only eighteen years, the resolution was clearly out of order and its adoption of no effect.

2. That the appearance of Dr. Shipman's name on the roll of Seniors was the result of an error in the minutes of the action relating thereto.

In view of these facts, and with all due respect for the many and valuable services of Dr. Shipman, your committee would recommend the adoption of the following resolutions:

1. *Resolved*, That the name of George E. Shipman, M.D., be removed from the roll of members of the SENIOR CORPS of the Institute, till such time as it may be placed there in accordance with the By-laws.

2. That Article VI of the By-laws be suspended in the case of George E. Shipman, M.D., so that he may have the privileges of membership in the Institute without the payment of annual dues.

J. P. DAKE,
I. T. TALBOT,
HENRY D. PAINE,
Committee.

On motion, the report of the committee was accepted and adopted, including the two resolutions submitted.

THE PRESIDENT: The next business in order will be the presentation of the report and papers of the

BUREAU OF OBSTETRICS.

J. F. COOPER, M.D., of Allegheny City, Penna., Chairman of the Bureau, announced the following papers:

The Anatomical Character of Puerperal Eclampsia; by C. P. SEIP, M.D., of Pittsburgh, Pa., and W. N. GUERNSEY, M.D., of New York.*

The Pathology of Puerperal Eclampsia; by J. H. WOODBURY, M.D., of Boston. (Section IV, Art. LV.)

The Causes of Puerperal Eclampsia; by R. T. SPEAKMAN, M.D., of Battle Creek, Mich. (Section IV, Art. LIV.)

Diagnosis of Puerperal Eclampsia; by W. H. HUNT, M.D., of Covington, Ky.*

Differential Diagnosis of Puerperal Eclampsia; by C. ORMES, M.D., of Jamestown, N. Y.†

Prognosis of Puerperal Eclampsia; by J. C. SANDERS, M.D., of Cleveland, Ohio. (Section IV, Art. LVI.)

Treatment of Puerperal Eclampsia; by C. W. BREYFOGLE, M.D., San José, Cal., and O. B. GAUSE, M.D., of Philadelphia.*

DR. C. ORMES, of Jamestown, N. Y., then read his paper on the *Differential Diagnosis of Puerperal Eclampsia.*

DR. J. C. SANDERS, of Cleveland, read his paper on the *Prognosis of Puerperal Eclampsia.*

DR. J. F. COOPER then read Dr. J. H. Woodbury's paper on the *Pathology of Puerperal Eclampsia.*

THE VICE-PRESIDENT: The papers of this bureau are now open for discussion.

The papers of the bureau were then briefly discussed (Section IV, Appendix), after which they were accepted and referred to the Committee of Publication, and, on motion, the bureau was declared closed.

THE SECRETARY, in the absence of the President, appointed DR. J. C. SANDERS, of Cleveland, Ohio, *Chairman of the Bureau of Obstetrics* for the ensuing year.

THE SECRETARY also announced a *Microscopical Exhibition*, in the hall, on the following morning, at 9 o'clock.

The Institute then adjourned, to meet at 8 o'clock in the evening.

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* Not received at time of going to press. GEN. SEC.

† Omitted at the request of the author. GEN. SEC.

SECOND DAY.

EVENING SESSION.

The Institute was called to order by the President, pursuant to adjournment.

THE PRESIDENT: The first business in order will be the report of the

BUREAU OF GYNÆCOLOGY,

of which DR. H. N. GUERNSEY, of Philadelphia, is chairman.

H. N. GUERNSEY, M.D., of Philadelphia: The Bureau of Gynæcology has selected as a subject for presentation and discussion, *Puerperal Thermometry.*

We have but three papers to offer, as follows:

On the Value of the Clinical Thermometer; by H. N. GUERNSEY, M.D., of Philadelphia. (Section XI, Art. XII.)

The Temperature and Pulse in Puerperality; by R. LUDLAM, M.D., of Chicago. (Section XI, Art. XIII.)

Report of Thirty Cases of Lying-in; by S. S. LUNGREN, M.D., of Toledo, O.*

DR. GUERNSEY: I would also state that the other members of this bureau have not been derelict, having presented to me a large number of charts, prepared according to the notice sent to the profession some months ago. These charts will be published, I trust.† My colleagues wish me to read my paper first, and I will now do so.

DR. GUERNSEY then read his paper on *The Value of the Clinical Thermometer*, which closed with a resolution to be acted upon by the Institute.

DR. S. S LUNGREN, of Toledo, O., then read his paper, entitled *A Report of Thirty Cases of Lying-in.*

DR. R. LUDLAM, of Chicago: Mr. President, Ladies and

* This very valuable paper is necessarily omitted from this volume in consequence of its having been received by the General Secretary only in brief synopsis.

† Were not engraved in time for use.

Gentlemen: I have to acknowledge the great kindness and generosity of my friend Dr. Guernsey, in calling attention so eloquently to this important matter of the temperature in diseases of women.

The few facts that I have to add to my report of a year ago are in confirmation of Dr. Guernsey's views, which were hinted at in my last report. I will but give you a synopsis of my paper, which is entitled *The Temperature and Pulse in Puerperality.*

It consists of the analysis of fifty cases treated in the puerperal wards of the Hahnemann Hospital of Chicago.

DR. LUDLAM then gave a brief digest of his paper, with a tabulated statement of the cases.

On motion, the papers of the bureau were accepted and referred to the Committee of Publication.

THE PRESIDENT: The papers of this bureau are now open for discussion.

The papers were then discussed (see Section XI, Appendix), after which the bureau was declared closed.

THE PRESIDENT appointed S. S. LUNGREN, M.D., of Toledo, O., *Chairman of the Bureau of Gynæcology* for the ensuing year.

By request the resolution of DR. GUERNSEY was then read, as follows:

Resolved, That this Institute create a Bureau of Medical Thermometry, whose duty it shall be to investigate, from year to year, the use of the clinical thermometer as a guide in the treatment of the sick, reporting on and demonstrating the same at our annual meetings.

DR. S. R. BECKWITH, of Cincinnati: While I am willing that there should be as many bureaus and reports as possible, yet we have now more bureaus than we can do justice to, and every year one or more of them suffers. I think we do not need such a bureau as this. Let the subject be attached to some existing bureau, and let it be the business of every practical bureau to report on the clinical thermometer. I would suggest, as an amendment, that each bureau be requested to make a report on the clinical thermometer annually.

This amendment was not seconded.

DR. T. S. VERDI, of Washington: The temperature is but a symptom, and we can not form bureaus for symptoms of disease.

The members making reports of cases of disease should give the temperature with the other symptoms. I see no occasion for a special bureau.

DR. H. N. GUERNSEY, of Philadelphia: My idea in presenting this resolution was, that if we had such a bureau we should have a large number of accurate reports and thus be able to arrive at reliable results, otherwise there would be no concert of action in taking observations. There should be in these observations a table showing the remedy, the temperature, the pulse and the respiration for each case, and their variations.

DR. A. KORNDŒRFER, of Philadelphia: Might not the Bureau of Clinical Medicine, for instance, request that a special appointment be made pertaining to it, yearly, on the use of the clinical thermometer? It should be the duty of a portion of the bureau to return each year a report on this subject. We should soon have three or four hundred charts a year, and could then make careful comparisons.

DR. J. P. DAKE, of Nashville, Tenn., then moved an amendment to the effect that the members of the Institute reporting cases be instructed to report the range of the thermometer in all cases, indicating the symptoms, the conditions, and how the temperature was changed by the remedies administered.

On motion the amendment was carried, and the resolution as amended was then adopted.

DR. KORNDŒRFER: Will any report of a case be received by this Institute without the temperature and pulse being given?

THE PRESIDENT: I suppose not. The next business in order will be the report of the

BUREAU OF PÆDOLOGY.

W. H. JENNEY, M.D., of Kansas City, Mo., Chairman of the Bureau, moved that, owing to the lateness of the hour, the report of his bureau be deferred until the next morning.

This motion was not agreed to.

DR. JENNEY then presented the papers of the bureau as follows:

The Anatomical Character of Rachitis; by T. C. DUNCAN, M.D., of Chicago. (Section XII, Art. XV.)

The Pathology of Rachitis; by WILLIAM H. JENNEY, M.D., Kansas City, Mo. (Section XII, Art. XVI.)

The Age, Causes, and Complications of Rachitis; by L. E. OBER, M.D., of La Crosse, Wis., and F. L. DAVIS, M.D., of Evansville, Ind. (Section XII, Art. XVII.)

The Diagnosis, Prognosis, and Hygienic Management of Rachitis; by FRANCIS BRICK, M.D., of Worcester, Mass. (Section XII, Art. XVIII.)

The Diagnosis, Prognosis, and Treatment of Rachitis; by SOPHIA PENFIELD, M.D., Danbury, Conn. (Section XII, Art. XIX.)

The Therapeutics of Rachitis; by H. C. ALLEN, M.D., Detroit, Mich. (Section XII, Art. XX.)

The further consideration of the bureau was then postponed until the morning session.

DR. J. P. DAKE, of Nashville, Tenn., offered the following resolution:

Resolved, That a special committee of three, in addition to the General Secretary, be appointed to revise the standing Resolutions of the Institute and to harmonize them with the By-Laws, recommending such changes in both Resolutions and By-Laws as may be necessary for the purpose; this committee to report on the last day of this session.

DR. DAKE: We have been from year to year adopting what we call "Standing Resolutions." Some of these have in time become inoperative; the spirit of others has been incorporated with the By-laws, as they have been altered and amended; and some are at variance with the By-laws. The object in view in having this committee appointed is to have the Standing Resolutions and the By-laws compared and made to harmonize, and the useful matter of the resolutions, as far as may be, incorporated with the By-laws.

DR. H. C. ALLEN, of Detroit, Mich.: This is a move in the right direction. There have been resolutions passed which have hampered us in our bureau reports. Some of our bureaus have done admirable work, but others, taking advantage of uncon-

sidered resolutions, have reported a variety of lengthy papers on a great variety of subjects, and have taken up unnecessary time, and perhaps given us inferior work.

I would move to amend the resolution to the effect that the committee shall present its report to-morrow.

Agreed to.

The resolution as amended was then adopted.

THE PRESIDENT then appointed Dr. J. P. Dake, of Nashville, Tenn., Dr. I. T. Talbot, of Boston, and Dr. L. E. Ober, of La Crosse, Wis., said committee, to act in conjunction with the General Secretary.

The Secretary was, by vote, instructed to furnish proper credentials to Dr. James A. Campbell, of St. Louis, Mo., as a delegate from the Institute to the Homœopathic Congress of 1878, to be holden in Paris, and to the British Homœopathic Society.

REPORT OF THE AUDITING COMMITTEE.

DR. I. T. TALBOT: As Chairman of the Auditing Committee, I report that the committee have examined the accounts and vouchers of the Treasurer and have found them correct.

On motion, the report was accepted and the auditors were discharged.

On motion, the Treasurer's report was then adopted. (Section I, Art. LXII.)

DR. TALBOT: In making this report I wish to say a word or two in relation to the duties of the Treasurer. He has, for many years, conducted the financial affairs of our society with much painstaking ability, taking the Institute when its receipts were about three hundred dollars a year, and when we were always behindhand from one to two hundred dollars, and when our *Transactions* were published as a mere pamphlet, owing to lack of means to issue a more valuable publication. He, by his assiduity, his attention to detail, his courtesy and energy, has since raised the amount of the annual dues, and collected the back dues that had been neglected year after year. Our income has gradually increased from two hundred dollars a year to four thousand, which was the amount collected last year. Now, I

feel that the least we can do for all that labor, is to give Dr. Kellogg a most hearty and unanimous vote of thanks, and I think it should be a matter for consideration, whether this Institute should not recognize and recompense our Treasurer in some more substantial way.

On motion of Dr. J. P. Dake, a unanimous vote of thanks was extended to Dr. Kellogg, the Treasurer, in appreciation of his faithful services to the Institute in that capacity.

THE PRESIDENT: Dr. Kellogg will please receive the thanks of the Institute.

DR. GEORGE A. HALL, of Chicago: I presume in all business it is the best investment we can make to engage a good clerk, and to insure his services by paying him well for them. While I do not wish to be the cause of Dr. Kellogg feeling in any way unpleasant about the matter, yet I think that as he has raised our income from four hundred to four thousand dollars a year, we certainly can afford to pay him for his services, to some extent at least. I would move, therefore, that the Treasurer receive five per cent. of the amount of moneys he collects as dues from the members of this Institute, after this date, as some compensation for his services.

The motion was seconded by several.

DR. E. M. KELLOGG, of New York: I wish to say a word on that motion. The Treasurer, though feeling very grateful to the gentleman for his motion, must respectfully decline to receive any compensation for his services. Many members of the Institute consider the dues to be rather onerous at present, and that alone is sufficient to prevent me from receiving any compensation, however small, for the labor I have bestowed in the duties of my office.

I hope that in a few years the dues can be lessened, as we have a growing membership, and I do not wish to add to the burden to the extent of a single cent, by any compensation to myself, and therefore I hope the gentleman will withdraw his motion.

DR. HALL: With this statement from the Treasurer, I withdraw my motion.

The Institute then adjourned, to meet on Thursday morning, at 9 o'clock.

THIRD DAY.

MORNING SESSION.

The Institute was called to order promptly at 9 o'clock by the President.

THE PRESIDENT then stated that as the Bureau of Pædology was not yet ready to proceed with its business, the Secretary would present the report and papers of the

Bureau of Organization, Registration, and Statistics,

of which the chairman, Henry M. Smith, M.D., of New York, was absent, together with most of the members of the bureau.

THE SECRETARY then announced that the bureau offered but one paper, as follows:

A Comparison of New and Old School Treatment in the Hospitals of New York City; by WALTER Y. COWL, M.D., late house surgeon to the Ward's Island Homœopathic Hospital, New York. (Section VI, Art. XVI.)

On motion, the paper was accepted and referred to the Committee of Publication, and the bureau was declared closed.

THE PRESIDENT then appointed I. T. TALBOT, M.D., of Boston, *Chairman of the Bureau of Organization, Registration, and Statistics* for the ensuing year.

DR. TALBOT then made a report on behalf of the honorary members, or "Veterans' Association," who had held their annual meeting. While the association had met with several and severe losses in the deaths of Swazey, Jeanes, Barrows and others, its ranks had been recruited by accessions from the active members, of such as had been in full and active membership for twenty-five years.

On motion, the report was accepted and appropriately referred.

T. P. WILSON, M.D., of Cincinnati, O., by permission of the Institute, presented a communication from the *Women's National Christian Temperance Union.* He stated that its general import was a request that the American Institute of Homœopathy, as the national representative body of the homœopathic school,

should take measures and exert its influence to abolish the use of alcoholic stimulants in the treatment of disease.

The reading of the communication was called for, whereupon it was read by the Secretary, and a motion prevailed that it be spread upon the minutes of the Institute, and that the General Secretary acknowledge its receipt, notify the Association of the action taken by the Institute, and refer the Association to action taken by the Institute on the question involved, at its annual session held in Washington, D. C., in 1872.

The communication was as follows:

THE WOMEN'S NATIONAL CHRISTIAN TEMPERANCE UNION TO THE NATIONAL HOMŒOPATHIC MEDICAL ASSOCIATION, CONVENED AT PUT-IN-BAY ISLANDS, JUNE, 1878.

RESPECTED SIRS: Since the days of the "Crusade" in 1871, our Christian women of the National Union, numbering over 100,000, have more than ever before become painfully conversant with the poverty, crime, and death that result from the use of intoxicating liquors. Our work in prisons, and among the poor and degraded, has shown us that squalid homes, imbecile children and brutal parents are the sure fruitage of drink. We have seen that it shuts their hearts to religion, and feeds and develops only the baser passions; that the *habit* of drinking, once formed, either through ignorance of its effects upon the body, or social custom, or advice of physicians as medicine, is *almost impossible* to break.

We are thankful that great numbers of the best physicians of our time are giving emphatic testimony against the effects of alcoholic stimulants, except in the rarest cases, and many indeed discontinuing their use in medical prescriptions.

The people, however, need more intelligence on this subject, brought from the thought and practice of able medical bodies. Women having the health of families under their care, depend almost entirely upon the family physician for the use or non-use of stimulants. His advice frequently makes or unmakes the boy growing to manhood.

May we beg of you, in view of the indiscriminate use of intoxicants, and the vast amount wasted in their consumption (enough to buy all the food of the nation), and especially in view of your distinguished influence, to prescribe the *least* amount of distilled and *fermented* liquors consistent with your ideas of right, and to give us such declarations, through your honorable body, as shall put the *use* of liquors in its correct light before the people.

With great respect,

SARAH K. BOLTON,
Member National Committee,
2126 Euclid Avenue, Cleveland, O.

MRS. ANNIE WITTENMYER,
President W. N. C. T. U, Philadelphia, Pa.

THE PRESIDENT: We will now continue with the business of the

BUREAU OF PÆDOLOGY.

DR. W. H. JENNEY then read his paper on *The Pathology of Rachitis.*

DR. H. C. ALLEN read his paper on *The Therapeutics of Rachitis.*

DR. L. E. OBER then read his paper on *The Age, Causes, and Complications of Rachitis.*

The remaining papers of the bureau were read by title and referred to the Committee of Publication.

The papers read were then accepted and similarly referred.

The papers were then discussed at some length (see Section XII, Appendix), after which the bureau was declared closed.

THE PRESIDENT appointed L. E. OBER, M.D., of La Crosse, Wisconsin, *Chairman of the Bureau of Pædology* for the ensuing year.

THE PRESIDENT: The next business in order will be the report of the

COMMITTEE ON LEGISLATION,

of which Dr. T. S. Verdi, of Washington, D. C., is chairman.

DR. T. S. VERDI then made the following verbal statement as the report of the committee:

Mr. President, Ladies and Gentlemen: It was my intention to present a thorough report at this session upon the statistics of homœopathy in all the States of the Union, and for that purpose I issued a circular, of which five hundred copies were distributed by the General Secretary, in which I requested an answer to certain questions. So few answered that I could not make the report. I trust that the reason why homœopathic physicians do not see the importance of this subject is that they are so busy with practice that they have no time for public duties.

Among the questions asked were the following:

"Does there exist any legislation in your city or territory in favor of or against any school of medicine?"

"Does there exist any legislation affecting the homœopathic school or its practitioners directly or indirectly?"

All the answers received from twenty-five States so far are in the negative.

There seems to be no law discriminating in favor of any school of medicine in any of the States, and this is due to the watchfulness of homœopathic physicians and to the love of liberty prevalent in our country, which has done away with such laws.

Another question was:

"Does any State or local board of health exist in your city, and if so, in what manner does this board affect the homœopathic school?"

There have been some apprehensions among homœopathic physicians regarding the formation of these boards of health, and particularly the State boards, this opinion being that in the authority given to such boards may be included the power to affect the practice of medicine.

I have as yet received no answer proving that such a thing has occurred. These State boards keep clear of any interference with homœopathy, which I think is wise on their part, as in such a contest they would surely come out second best. Allopathic physicians do not concede very much to us willingly, and if they leave us alone in matters of legislation, depend upon it it is because they have acquired a wholesome dread of meddling with the homœopathic school, since in several instances they have had severe lessons regarding the consequences. I am sure that if all homœopathic physicians were to be active and interested in the matter, there never would be a bill passed in the United States affecting any particular school of medicine. If this ever should occur, it will be due to the inattention or lack of spirit or carelessness of some medical brother.

I have also asked whether any homœopathic physician in the United States has been appointed anywhere to any position of honor or trust by State officers, and if so, what the position was, and have received no response. I hoped to have presented a thorough report on this subject. It is important to see to it that we, as a school, are represented in these positions of trust and honor. I think that we should have our share of such

honors. I trust that in the current year I shall secure sufficient answers to these questions to be able to make a thorough report which will enlighten all of us.

There is in California a law as to the qualification of physicians, and they are making a hard fight to drive away the quacks who settled in the early years in that State.

In Canada they are also doing a good work in the same matter.

In Kansas the State authorities have admitted homœopathic physicians to the university.

DR. J. P. DAKE, of Nashville, Tenn.: I intended to read a paper before this committee, but owing to the shortness of time, I wish merely to speak on a certain point. We are, as a school of medicine, concerned in any legislation that may discriminate against us.

The State assumes a great responsibility in dictating what shall be the qualifications of the man who essays to cure his fellow-beings, and if great care is not taken, individual rights may be overborne and destroyed. It is a fact that we all know, that any particular form of training or of medical instruction, or any definite time of medical study, is not absolutely necessary to qualify a man for the duties of a physician. Some of the most useful men, some who have improved therapeutics the most, who have made great discoveries, who have extended the progress of medicine immensely, have never enjoyed a collegiate education.

Some individuals have made discoveries and improvements who are not even physicians. Out of love for humanity they have gone forth and started reforms in hospitals and prisons. I could cite many examples of these persons uneducated in medicine. So, in view of these facts, a State should be very cautious how it lays down lines and affects standards to which every physician is to be brought up.

I differ with some of my old-school brethren regarding this matter. I think it the duty of the State to so inform its people regarding any medical man, that in the hours of sickness and danger the people may know whom to trust.

All the legislation needed in this matter is to require every practitioner of medicine before he exercises his profession in a

community to record his name and titles in the clerk's office, stating, under oath, where he was educated, how long he studied, if previously in practice, where, and how long; this information should be open to inspection by all.

And if afterward any citizen complains that he has made a false statement, he should be punished, if guilty, for perjury. If such laws were enacted in every State, and all who practice medicine or surgery were required to make such a record under oath, and if such statements were open to the inspection of any one, then whoever employs an ignoramus or a quack has himself to blame, and upon him, and not on the State, rests the responsibility. The State cannot afford to assume the responsibility of putting a seal of prohibition on one man and assenting to another, and asserting that the latter is qualified because he has a diploma, or because he was a student with a bright memory who graduated years back.

The information of the State is not sufficient to dictate what man is safe to be employed in sickness and danger. These State laws have been long employed as engines of oppression, and are opposed to true and scientific progress.

I hope it will not be so in the future, and it behooves us as liberal men to be careful how we take positions or favor legislation unjust or oppressive to the people.

DR. D. S. SMITH, of Chicago: I have had the pleasure of being associated with Dr. Verdi in this State Board of Health question. I received a note from him requesting a report. The State of Illinois has a State law which we consider is a good law under its present management. It provides that all persons who have practiced medicine in the State for ten years prior to the passage of the law, and have no diploma, are still allowed to practice without a diploma being required, but must pass an examination before a Board of Censors appointed by the government, and must exhibit some evidence to the board that they have been in practice and are respectable and well behaved. The board then furnishes a certificate, which is, together with a synopsis of the facts of the case, received and registered at the Recorder's office.

If the man is a graduate of any medical school, he presents himself before the board with his diploma; its date is recorded,

together with the name of the college issuing the diploma. I had been in the State for over forty years and had been honored with several diplomas, the last one being from the Jefferson College. They examined the diploma and furnished me with a certificate, which I had registered. When this law took effect there was a stampede from the State. Many were practicing who had no qualification by education, either medical or literary, and scarcely intelligence and integrity enough to be called doctors, and such escaped from the State; others entered the classes and took one or more courses; others shrunk from the examination.

In consequence of this law there was a great increase of students in the medical schools of our city. Men went forward for an examination in order to obtain a diploma and thus retain their business. It is to this fact that we owe the unusual number of students in attendance at the Hahnemann College of Chicago the past session.

This Board of Censors was appointed by the Governor at the State Society meeting, held at Springfield, two years ago. The names of several gentlemen as representatives of homœopathy on that board were duly forwarded to his Excellency. While the American Institute was in session last year, the Governor made his appointment, and at the request of two allopathic physicians appointed Dr. R. Ludlam as one of the board of examiners for the State of Illinois. They also put on a gentleman from the Eclectic school, and two scientists. Now, this committee, composed of such incongruous elements, has always acted in perfect harmony and accord. Great fairness and generous conduct characterize this board; nothing is asked about the peculiar school to which a man belongs, and all applicants have been treated in the same manner.

A MEMBER: Can a person who has no diploma obtain a certificate from this board without passing an examination?

DR. SMITH: If he had been in practice for ten years prior to the law going into effect, he could. I would like to speak about our Board of Health in Chicago.

DR. T. P. WILSON, of Cincinnati: I rise to a point of order. We are consuming too much time about Illinois and Chicago.

F. X. SPRANGER, M.D., of Detroit, Mich.: A few years ago

the allopathists attempted to force a Board of Censors on us in Michigan. At present our board consists of five allopaths, two homœopaths, and one eclectic. In Canada they have an Examining Board composed of allopaths, homœopaths and eclectics, but the allopathists are in the majority, and the homœopathic applicant, if he is known to be such, is always rejected. His only chance is to not tell that he is a homœopathist, and in such a case, the homœopathic members tell me, there is no trouble.

If in our State Boards a majority are allopaths, if they please they can reject every homœopathist who applies for examination. They wanted, in Michigan, to have a law passed so that every physician going into practice there, no matter from what college graduated, will be obliged to be examined, unless the board consider the college reputable or regular. Such a board would have ignored every homœopathic college in the country. If we are to have examining boards let them be both homœopathic, allopathic and eclectic, but do not let the allopaths have a majority.

Dr. F. R. McManus, of Baltimore: It appears that physicians who are homœopathists, or claim to be such, are afraid of the State law and of the Board of Censors. I am an older man than I was forty-nine years ago, when I graduated, but I would not be afraid to go before any fair, honest Board of Censors, nor do I think any member of this Institute ought to be afraid. We, as homœopathists, should understand this matter, and we shall then know how to act. If a man is a homœopathist he ought also to be a classical scholar and a *de facto* physician. He should thoroughly understand the various branches, as anatomy, physiology, etc., necessary to make a thorough physician, and he should also know the collateral branches, and homœopathy besides. I do not think we need raise the cry of oppression; they do not dare reject a man if he knows his business.

Dr. H. C. Allen, of Detroit, Michigan: If I understand Dr. Dake correctly, he does not think it necessary that a man should have a degree or should have attended lectures. I may have misunderstood him, but if that is his opinion, I must beg to differ with him. I wish also to correct Dr. Spranger. My friend Dr. Verdi briefly referred to the legislation in Canada.

I am a Canadian, practiced there for three or four years, and was a member of the Examining Board of which Dr. Spranger spoke. Previous to that time the allopathic schools of Canada were turning out from one hundred and fifty to two hundred students a year, and the homœopathists were graduating five or six; the result of this Examining Board was, that from sixty to sixty-five per cent. of the allopaths managed to get through yearly, while there was only one or two homœopaths.

A homœopath there must stand the same examination as his allopathic brethren, up to the point where his homœopathic practice comes in; the therapeutics of homœopathy make the only difference in the examination of the two schools. In Canada a man must pass a preliminary examination before he can become a student of medicine, which examination is very hard, and is on all the branches of the English language, and on either Latin, Greek, German, French, or Natural Philosophy; the latter are optional, but the candidate must have one of them. The date of this examination and the time he commences to study are registered. He is obliged to study four years and to attend three full courses of lectures, of six months each. He must have attended six cases of obstetrics, and must pass an examination in all the branches pertaining to a medical education; he must also have attended two full courses of hospital duty, and then he must appear before this Examining Board for examination.

Although he has all the diplomas of America or Europe he cannot be admitted to practice until he has passed this board. He may come from the University of New York, or from the University of Pennsylvania, yet he must conform to this rule the same as a Canadian graduate.

All men start on the same basis if they can pass this board. It is on a square and fair basis, that of a man's ability, and there is where it ought to be placed.

On motion, the report of the committee was accepted and it was declared closed.

The President then appointed DR. T. S. VERDI, of Washington, D. C., *Chairman of the Committee on Legislation* for the ensuing year.

THE PRESIDENT: The presentation of reports from Societies and Institutions is now in order.

W. M. BAILEY, M.D., of Detroit, Michigan: I wish your indulgence to correct a prevailing impression about our school in the State of Michigan. It has been said that we have been fighting among ourselves, but I am happy to announce that the fight is over, the wounds are healed, not by first intention but by granulation, and we trust they are healed permanently.

We were all working for the same thing, though not in the same way. We have for three years held a foothold in the State University; our college is in a good condition.

The Michigan Institute has merged itself with the other State Society, so that we now have but one State Society, whose members are working in peace and harmony; which God grant they may continue to do. (Applause.)

THE PRESIDENT: If there are no other reports, we will continue our regular order of business, and hear the report and papers of the

BUREAU OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY,

of which Dr. G. S. NORTON, of New York city, is Chairman.

G. S. NORTON, M.D., of New York: *Mr. President and Members of the Institute:* It is my pleasure to announce that we have several papers in our bureau that I think will be of much interest to the general practitioner. These papers will not exceed the usual limit of fifteen minutes apiece in the reading of them.

The subjects chosen for discussion are as follows:

Upon the Eye: Diseases of the Cornea.

Upon the Ear: Diseases of the Internal Ear.

Upon the Throat: Syphilitic Diseases.

Some papers not bearing on these subjects will also be presented. I present the following papers by title and request that they be referred to the Publication Committee:

Treatment of Suppurative Keratitis; by ALFRED WANSTALL, M.D., of Baltimore. (Section IX, Art. XXXIII.)

The Abuses of Atropia; by D. J. MCGUIRE, M.D., of Detroit, Michigan. (Section IX, Art. XXXVI.)

Anæsthetics in Cataract Extraction; by H. C. FRENCH, M.D., of Cleveland.

Corneal Abrasion; by JAMES A. CAMPBELL, M.D., of St. Louis. (Section IX, Art. XXXI.)

Visible Speech as an Element in the Instruction of Deaf Mutes; by H. C. HOUGHTON, M.D., of New York. (Section IX, Art. XXXVIII.)

The remaining papers to be presented are as follows:

Indolent Ulcers of the Cornea; by W. A. PHILLIPS, M.D., of Cleveland. (Section IX, Art. XXIX.)

Saemisch's Operation for Ulcer of the Cornea; by D. B. HUNT, M.D., of New York. (Section IX, Art. XXX.)

Suppurative Keratitis; by C. H. VILAS, M.D., of Chicago. (Section IX, Art. XXXII.)

Strabismus; by T. P. WILSON, M.D., of Cincinnati. (Section IX, Art. XXXV.)

Auditory Vertigo; by W. H. WOODYATT, M.D., of Chicago. (Section IX, Art. XXXVII.)

Pannus resulting from Granular Lids; by GEO. S. NORTON, M.D., of New York. (Section IX, Art. XXXIV.)

DR. W. A. PHILLIPS then read his paper on *Indolent Ulcers of the Cornea.*

DR. DWIGHT B. HUNT read his paper on *Saemisch's Operation for Ulcers of the Cornea.*

DR. C. H. VILAS then read his paper on *Suppurative Keratitis.*

DR. T. P. WILSON read his paper on *Strabismus.*

DR. W. H. WOODYATT read his paper on *Auditory Vertigo.*

DR. G. S. NORTON read his paper on *Pannus resulting from Granular Lids.*

On motion, the papers were accepted and referred.

A brief discussion then ensued (see Section IX, Appendix), after which the bureau was closed.

The President appointed DR. W. A. PHILLIPS, of Cleveland, *Chairman of the Bureau of Ophthalmology, Otology, and Laryngology* for the ensuing year.

The Institute then proceeded to choose a place for holding the next meeting, in accordance with the rules. Newport, Long Branch, Niagara Falls, Lake George, and several other places

were mentioned. A ballot being taken, it was found that a majority of all the votes cast was in favor of Lake George, N. Y., as the place, and the selection of the time for holding the meeting was referred to the Executive Committee and the Committee of Arrangements.

ELECTION OF OFFICERS.

The Institute then proceeded to elect officers for the ensuing year, with the following result:

President.

CONRAD WESSELHŒFT, M.D.,	Boston, Mass.

Vice-President.

N. FRANCIS COOKE, M.D.,	Chicago, Ill.

General Secretary.

R. J. MCCLATCHEY, M.D.,	Philadelphia.

Provisional Secretary.

J. C. GUERNSEY, M.D.,	Philadelphia.

Treasurer.

E. M. KELLOGG, M.D.,	New York.

Censors.

F. R. MCMANUS, M.D.,	Baltimore.
R. B. RUSH, M.D.,	Salem, O.
D. S. SMITH, M.D.,	Chicago.
THOMAS MOORE, M.D.,	Philadelphia.
H. C. ALLEN, M.D.,	Detroit.

The President elect, DR. WESSELHŒFT, being called for, thanked the Institute in a brief speech.

The General Secretary announced that he had just received the following telegram:

"MONTPELIER, VT., June 20th, 1878, 11.55 A.M.

"The Vermont Homœopathic Medical Society, now in session at this place, sends fraternal greeting to the American Institute of Homœopathy.

"A. A. ARTHUR,
"Secretary."

On motion, the Secretary was instructed to acknowledge the receipt of the telegram, and return the fraternal greeting of the Institute.

THE PRESIDENT: The next business will be the presentation of the report and papers of the

BUREAU OF PSYCHOLOGICAL MEDICINE.

DR. T. L. BROWN, of Binghamton, N. Y.: In the absence of the Chairman of this bureau, SELDEN H. TALCOTT, M.D., who has been ill for six months, I will present the report. On the 10th of this month DR. TALCOTT requested me to take charge of the papers of the bureau. I have but one paper to present, viz., *The Matter Motion of Remedies Psychologically Considered;* by T. L. BROWN, M.D., of Binghamton, N. Y. (Section VIII, Art. XIII.)

DR. BROWN then read his paper on *The Matter Motion of Remedies Psychologically Considered.*

On motion, the paper was accepted and referred to the Committee of Publication, and the bureau was declared closed.

The President appointed T. L. BROWN, M.D., of Binghamton, N. Y., *Chairman of the Bureau of Psychological Medicine* for the ensuing year.

THE PRESIDENT: We will now hear the report of the

BUREAU OF MICROSCOPY,

of which C. P. ALLING, M.D., of Bradford, Pa., is Chairman.

DR. C. P. ALLING: The Bureau of Microscopy desires to present the following paper:

The Analysis of Urinary Deposits; by C. P. ALLING, M.D., of Bradford, Pa. (Section XIV, Art. IV.)

I wish to remark that this bureau presented a fine collection of pathological and histological specimens, together with some excellent improved microscope objectives and stands. These have been exhibited to a few only in a private room, but the accommodations were inadequate, and the light not as good as we could have wished it to be, and therefore we have not done as well as we expected.

DR. ALLING then read his paper on *The Analysis of Urinary Deposits.*

On motion, the paper was received and referred to the Committee of Publication.

After a short discussion, on motion the bureau was declared closed (see Section XIV, Appendix).

The President then appointed C. P. ALLING, M.D., of Bradford, Pa., *Chairman of the Bureau of Microscopy* for the ensuing year.

THE PRESIDENT: The next business in our regular order will be the report of the

BUREAU OF ANATOMY AND PHYSIOLOGY,

of which Dr. H. B. Van Norman, of Cleveland, is chairman.

H. B. VAN NORMAN, M.D.: We have four papers belonging to this bureau, as follows:

Anato-Physiology in the Healing Art; by LEWIS BARNES, M.D., of Delaware, O. (Section VII, Art. XXXI.)

Perforate Foramen Ovale; by A. W. HOLDEN, M.D., of Ward's Island, N. Y. (Section VII, Art. XXX.)

An Examination of the Doctrine of the Minimum Dose and the Theory of Dynamization as Promulgated by Dr. Samuel Hahnemann; by H. M. PAINE, M.D., of Albany, N. Y. (Section VII, Art. XXVIII.)

Hereditary Descent; by H. B. VAN NORMAN, M.D., of Cleveland, O. (Section VII, Art. XXIX.)

DR. LEWIS BARNES then read his paper on *Anato-Physiology in the Healing Art.*

On motion, Dr. Barnes's paper, together with the remaining papers of the bureau, were accepted and referred to the Committee of Publication, Dr. Van Norman declining to read his paper owing to want of time.

On motion, the bureau was closed, there being no discussion.

THE PRESIDENT appointed H. B. VAN NORMAN, M.D., of Cleveland, O., *Chairman of the Bureau of Anatamy and Physiology* for the ensuing year.

On motion, the report of the special committe on the

REVISION AND AMENDMENT OF THE BY-LAWS AND STANDING RESOLUTIONS

was called for.

DR. J. P. DAKE, of Nashville, Tenn.: As chairman of the committee, I beg leave to report as follows: I wish first to explain that your committee found, on looking over the volume of *Transactions*, an accumulation of "Standing Resolutions" that have been printed from year to year since the beginning of the Institute, some of which are already expressed in the By-Laws, although their publication still continues, they not having been repealed. We wish now to expunge such as have been merged with the By-Laws, and also to remove some that are expressed in our Code of Ethics, and others that have become inoperative through time.

DR. DAKE then read such standing resolutions or sections of resolutions as had been referred to by the committee's report, and they were expunged and ordered to be omitted from the future publications of the Institute by a unanimous vote. (See Section I, Art. LXVI.)

The By-laws were then taken up, article by article, and passed upon by the Institute. The alterations and amendments suggested by the committee were, in almost every instance, adopted without change, but in a few cases slight amendments were made, and the alterations or amendments were then adopted as amended. The By-laws were then adopted as a whole. (See Section I, Art. LXV.)

CODE OF ETHICS.

DR. I. T. TALBOT moved that the Secretary be instructed to print the *Code of Ethics* of the Institute with the volume of *Transactions* of this session.

Agreed to.

DR. THOMAS MOORE, of Philadelphia, moved that a committee be appointed on the "*Law of Care*," to make a report at every session of the Institute.

Agreed to.

THE PRESIDENT appointed Dr. Moore chairman of this committee, with power to appoint his associates.

DR. I. T. TALBOT then presented, as chairman of the committee, the report of the

INTERCOLLEGIATE COMMITTEE,

which was as follows:

TO THE AMERICAN INSTITUTE OF HOMŒOPATHY:

The Intercollegiate Committee respectfully report, that during the present session of the Institute they have held two meetings. The following members were present as representatives of their respective colleges:

Boston University School of Medicine.

I. T. TALBOT, M.D. C. WESSELHŒFT, M.D.

Homœopathic Medical College of Missouri.

E. C. FRANKLIN, M.D. P. G. VALENTINE, M.D.

Hahnemann Medical College of Philadelphia.

R. J. MCCLATCHEY, M.D. A. KORNDŒRFER, M.D.

Cleveland Homœopathic Hospital College.

N. SCHNEIDER, M.D. J. C. SANDERS, M.D.

New York Homœopathic Medical College.

JOHN W. DOWLING, M.D. ST. CLAIR SMITH, M.D.

Hahnemann Medical College and Hospital of Chicago.

R. LUDLAM, M.D. C. H. VILAS, M.D.

Chicago Homœopathic Medical College.

J. S. MITCHELL, M.D. W. H. WOODYATT, M.D.

Michigan University, Homœopathic Department.

SAMUEL A. JONES, M.D. J. G. GILCHRIST, M.D.

Pulte Medical College of Cincinnati, O.

S. R. BECKWITH, M.D. J. D. BUCK, M.D.

There were no representatives present of the Homœopathic School of the University of Iowa, nor of the Women's Medical College and Hospital of New York City.

I. T. TALBOT, M.D., of Boston, was appointed Chairman of the Committee, and J. S. MITCHELL, M.D., of Chicago, Secretary.

C. H. VILAS, M.D., of Chicago, Secretary of the WESTERN ACADEMY OF HOMŒOPATHY, presented a copy of the report of the proceedings of the "Intercollegiate Conference" recently held at Indianapolis. On motion of Dr. S. R. Beckwith, the Secretary was instructed to acknowledge its receipt.

Statements were then made by the members of the committee in regard to the course and character of the instruction given in their several institutions, and a full and free interchange of views and opinions on these important subjects took place.

At the second session of the committee, Dr. J. D. Buck, of Cincinnati, presented a series of resolutions and a blank to be used by the various colleges and sent to the annual sessions of the Institute. It was agreed that these should be submitted to the action of the Institute.

The Chairman of the Committee was instructed to report to the Institute the names of the members of the committee present, the colleges they represent, and the general minutes of the committee, together with the statement that it is the determination of the colleges to carry out the suggestions made by the Institute in several standing resolutions, and to do all in their power to still further raise the standard of requirements of the doctorate.

(Signed), I. T. TALBOT, *Chairman.*
J. S. MITCHELL, *Secretary.*

On motion, the report of the Intercollegiate Committee was accepted and referred to the Committee of Publication.

The GENERAL SECRETARY, in behalf of the AMERICAN HOMŒOPATHIC OPHTHALMOLOGICAL SOCIETY, asked for and obtained permission, by a unanimous vote, to print such parts of the proceedings of that Society as might be selected, with the *Transactions* of the Institute, at the cost of the Ophthalmological Society.

MEDICAL EDUCATION.

DR. J. D. BUCK, of Cincinnati, Ohio, then submitted the following series of resolutions, and a draft of a blank to be used by the homœopathic colleges in the United States for the purpose of making an annual report to the American Institute of Homœopathy in regard to its students and graduates, etc., being the same resolutions and blank submitted by him at the meeting of the Intercollegiate Committee:

Resolved, That this Institute furnish to each of the homœopathic medical colleges of the United States blanks for making annual reports to the Institute, as herewith submitted.

Resolved, That no college shall be hereafter recognized by this Institute, either by the reception of its delegates or the admission of its graduates, which fails to make such annual report.

Resolved, That hereafter, at each annual session of the Institute, the regular order of business for the opening session of the second day shall be the reading of college reports by the General Secretary, and that any exceptions taken to such reports shall be presented in writing and referred to the Committee on Medical Education.

The accompanying blank form, which is self-explanatory, is as follows:

TO THE

AMERICAN INSTITUTE OF HOMŒOPATHY.

Session of 18____, *held at* _____, *commencing* _____, *closing* _____

Report of _____ *College of* _____

Session of college opened _____, *and closed* _____

Whole number of matriculants present during session _____

No. of didactic lectures _____; *of clinical lectures* _____; *of clinical cases* _____

NAMES OF GRADUATES FOR THE YEAR.

NAME.	Residence and preceptor.	Age.	Time of study and course.	Lectures attended, when and where.	Certified to, and recommended by.	REMARKS.
John Brown	Cincinnati. C. C. Bronson.	28	Four years. Graded course.	Pulte College. Three full courses.	C. C. Bronson, M.D.	
John Smith	Sandusky, Ohio. Practitioner.	40	Begun 8 years ago. Practiced 6 years.	Cleveland, Ohio. 1872–73. Pulte, 1878–79.	J. B. Massey. E. Gillard.	

After a brief discussion, the resolutions and the blank form were unanimously adopted.

DR. J. P. DAKE, on behalf of the Board of Censors, presented the names of four applicants for membership, who had been recommended for membership by the Board.

On motion, the physicians named were unanimously elected members of the Institute. (See *Complete Report of the Board of Censors.*)

It was moved and carried that a special *Committee on the Clinical Thermometry of Puerperal Diseases* be created.

THE PRESIDENT then appointed HENRY N. GUERNSEY, M.D., of Philadelphia, chairman of said committee, with power to appoint associates.

On motion, a vote of thanks was unanimously given the President, for the able, courteous, and dignified manner in which he had presided over the session.

On motion, a vote of thanks was tendered the other officers of the Institute, for the faithful performance of their duties.

On motion, a vote of thanks was tendered the proprietors of the Put-in-Bay Housé, for their many courtesies and attentions.

The Institute then, having finished all the business of the session, adjourned.

COMPLETE REPORT OF THE BOARD OF CENSORS.

BECKER, FREDERICK W., M.D., Aurora, Ind.,	Med. Dep. University of Berlin, 1863.
BURCK, FRANK T., M.D., Frederick, Md.,	Hah. Med. Coll., Philadelphia, 1876.
CUSHING, CHARLES F., M.D., Elyria, O.,	Cleveland Med. Coll., 1861.
CRANCH, EDWARD, M.D., Erie, Penna.,	N. Y. Hom. Med. Coll., 1875.
DAVIS, JOHN E. L., M.D., Nyack, N. Y.,	N. Y. Hom. Med. Coll., 1877.
DINSMORE, SAMUEL W. S., M.D., Sharpsburg, Pa.,	Hah. Med. Coll., Philadelphia, 1876.
GETZE, GEORGE M., M.D., Tarentum, Pa.,	Hah. Med. Coll., Philadelphia, 1877.
HASTINGS, CAROLINE E., M.D., Boston, Mass.,	New Eng. Female Med. Coll., 1866.
JANNEY, FRANCES G., M.D., Columbus, O.,	Boston University School of Med., 1877.
JACKSON, WILLIAM LEAVITT, M.D., Boston, Mass.,	Harvard Medical School, 1876.
JACKSON, WILLIAM H. H., M.D., Oil City, Pa.,	Med. Dep. Western Reserve Coll., 1868.
LEAVITT, SHELDON, M.D., Chicago, Ill.,	Hah. Med. Coll., Chicago, 1877.
MARTIN, WILLIAM J., M.D., Pittsburg, Pa.,	Hah. Med. Coll., Philadelphia, 1877.
MILLER, ZACHARY T., M.D., Pittsburg, Pa.,	Hah. Med. Coll., Philadelphia, 1877.
MORRILL, EDWIN C., M.D., Norwalk, O.,	Cleveland Med. Coll., 1865.
OWENS, WILLIAM, JR., M.D., Cincinnati, O.,	Pulte Med. Coll., Cincinnati, 1878.
RINEHART, CLARENCE C., M.D., Pittsburg, Pa.,	Hah. Med. Coll., Philadelphia, 1877.
SCOTT, JOHN P., M.D., Saginaw, Mich.,	Hah. Med. Coll., Philadelphia, 1877.
SCOTT, SAMUEL C., M.D., Saginaw, Mich.,	Hah. Med. Coll., Philadelphia, 1878.
SAWYER, ALFRED I., M.D., Monroe, Mich.,	Cleveland Med. Coll., 1854.
SPRANGER, FRANCIS X., M.D., Detroit, Mich.,	Cleveland Med. Coll., 1864.
VAN DERZEE, WILLIAM H., M.D., Albany, N. Y.,	Albany Med. Coll., 1875.
WINSLOW, WILLIAM H., M.D.,	Jefferson Med. Coll., 1871. University of Pennsylvania, 1874. Hah. Med. Coll., Philadelphia, 1877.

LXII.

TREASURER'S REPORT.

DR. E. M. KELLOGG, TREASURER, IN ACCOUNT WITH THE AMERICAN INSTITUTE OF HOMŒOPATHY. CR.

1877.			1877.		
June 27.	To balance on hand,	$2824 14	June 27.	By bill of Chairman of Bureau of Materia Medica,	$34 08
	Dues, etc., received up to June 15th, 1878,	3121 00	July 20.	By bill of Stenographer,	286 00
		$5945 14	Sept. 8.	" " for Printing, etc.,	10 75
			Sept. 14.	" " " Engrossing Diplomas,	10 40
			Dec. 6.	" Secretary's Clerical Fund,	1000 00
			Dec. 11.	" bill for Messenger, etc.,	4 20
			1878.		
			March 13.	By bill for Engravings,	125 00
			June.	Postage, Stationery, etc.,	88 15
			"	Expressage and collections,	25 05
			"	Cash advanced Secretary for printing, binding, and mailing the Transactions of 1877,	2500 00
					$4083 63
			June 18.	Balance on hand,	1861 51
					$5945 24

AUDITOR'S REPORT.

The undersigned, Auditing Committee, have examined the accounts and vouchers of the Treasurer, from June 27th, 1877, to June 18th, 1878, and find them correct.

Attest:

I. T. TALBOT,
D. S. SMITH,
C. PEARSON,
Auditors.

LXIII.

NECROLOGICAL REPORT.

By Henry D. Paine, M.D.,

Necrologist.

GEORGE W. SWAZEY, M.D., SPRINGFIELD, MASS.

Dr. Swazey was one of the founders of the Institute, and, from its very formation, one of the most regular and interested attendants at its sessions, and most useful members. He has been removed from our Association by a sudden and fatal casualty, in the midst of his regular professional labors. He was the leading homœopathic physician of Western Massachusetts. He was born at Exeter, N. H., August 10th, 1812.

In the full acceptance of the term, Dr. Swazey was a self-made man; from the college to the grave, he was essentially and exceptionally a *working man.* He commenced his college course at Bowdoin, Maine, in 1835. The following year he spent at Dartmouth, but returning to Bowdoin, he graduated there in 1837. He at first, naturally, adopted the allopathic system of practice, but a chance perusal of Hahnemann's *Organon,* while attending his third course of lectures, at Bowdoin, made a medical skeptic of him, and finding at the same time that Hahnemann's fairly proposed theory was unfairly viewed by the oracles to whom he was looking for light upon medical subjects, he conjectured that the cause must be weak, or have weak defenders, which furnished only ridicule for an argument against it, and was, therefore, led to examine the foundations of both

methods with greater attention. Having finally satisfied himself, after a careful and conscientious examination, of the superior claims of homœopathy and of the advantages of the new practice, he—to use his own words—"buckled up his saddle-bags, with drugs and lancet inside, for the last time, and bade farewell to the town on the beautiful Penobscot." Not long after he "hung out" for exclusive homœopathy in Newburyport, and the success with which he met was more than sufficient to confirm him in the conviction, which never grew weak throughout his long and honorable life.

He removed to Springfield in 1844, and represents, historically and medically, the homœopathic practice in that city. He was the pioneer of homœopathy in Western Massachusetts, and that method obtained character and success in that region only from him. He was one of the organizers, and a president, of the Massachusetts Homœopathic Medical Society, and continued an active and honored member while he lived. He was a contributor to the homœopathic medical journals, and quite a number of his addresses at the meetings of state and national societies have been published and widely circulated, among which may be mentioned as especially valuable, "The Scientific Basis of Homœopathy," delivered before the Massachusetts Homœopathic Medical Society; and, "The Nature of Life, the Nature of Disease, and the Law of Cure," delivered before the American Institute of Homœopathy.

Dr. Swazey remained in Springfield, in practice, for thirty-three years, and was widely known as an intelligent, skilful, and successful physician. He was thoroughly devoted to his profession, never sparing himself when his services were needed. He had an extensive practice in Springfield and vicinity, and justly commanded the confidence and respect of his patients and of the community. Large-hearted, large-brained, and large-souled, he believed in what he was doing, and there was not a grain of charlatanism in the way he did it.

The following extract gives a true estimate of the universal regard in which he was held by those with whom he came in contact. "In the sick-chamber, Dr. Swazey was a very benediction. His step carried solace and healing to the suffering, as

it crossed the threshold of their rooms. How gentle he was towards the sick, and his face was radiant as an angel's, with the sympathy that welled from his heart. To the sick he was never exorbitant, and to God's poor he was devoted and generous. A man full of the spirit of progress, never clinging to the past, but looking steadily onward and upward, full of the 'humanities' of the period, and in hearty sympathy with everything that tended to the elevation and betterment of the human family. He was, in one sense, a 'slow man,' but a strong man; combative and controversial in his disposition, but aiming steadily toward the right, and keeping step to no drum-beat that had not an inspiration in that direction." He was a man who could think as well on his feet in the presence of an assembly, as in an arm-chair in the quiet of his office. In the medical conventions of the school, he was always a force, alert to observe any movement not in a line with what he deemed its true policy; a ready debater, fluent and easy of expression.

"He has done worthy labor for the cause he served, and will be remembered as one of the valiant souls who dared to step from the ranks at a time when to do so involved a sacrifice of much that cannot now be realized, and to uplift and carry forward to a wonderful victory, the banner inscribed with the then strange device, Homœopathy."

In religious belief he was a decided Swedenborgian, yet liberal in his views towards other Christian churches. He was no blind zealot in the cause he honored. His mind was deeply imbued with sentiments of honor and integrity, and his life was a beautiful memorial of conscientious and consistent devotion to his high standard of truth and duty.

The death of this highly honored brother and useful colleague occurred September 8th, 1877, at the age of sixty-five years. He left home on Saturday evening to visit a patient in Deerfield, and mistaking his way in the darkness, walked off a railroad bridge near the depot, and fell a distance of nearly thirty feet to the roadway below. His moans soon summoned assistance from a neighboring residence, whither he was conveyed and tenderly cared for until he expired an hour later. He bore his intense suffering with great fortitude, and showed no fear whatever of

death. With characteristic self-forgetfulness, his last words were of loving remembrance to his family. He "died in the harness," giving at last life itself to his calling. He lived for those who were committed to his care, and he died in his efforts to minister to sickness and suffering.

As already stated, his membership in the Institute dated from its foundation in 1844.

At a special meeting of the homœopathic physicians of Boston, September 10th, 1877, the following resolutions were adopted:

"*Resolved*, That we learn with extreme regret and deep sorrow, of the very sudden and accidental death of our esteemed colleague and co-laborer in the cause of homœopathy, Dr. George W. Swazey, of Springfield, and that we herewith tender to the family of the deceased our sincere condolence and heartfelt sympathy, in this their hour of bereavement.

"*Resolved*, That the following gentlemen be appointed our delegates to attend the funeral and to pay the tribute of respect to the memory of the deceased, and to present a copy of these resolutions to the family.

O. S. SANDERS, M.D.,
DAVID THAYER, M.D.,
E. B. DE GERSDORFF, M.D.,
H. M. JERNEGAN, M.D.,
T. H. UNDERWOOD, M.D.,
CONRAD WESSELHŒFT, M.D.,
H. L. CHASE, M.D.,
M. G. HOUGHTON, M.D,
I. T. TALBOT, M.D.,
GEORGE M. PAYNE, M.D."

CHARLES F. MANCHESTER, M.D., OF PAWTUCKET, R. I.

On Friday morning, April 5th, Dr. C. F. Manchester calmly and peacefully passed from earthly and temporal scenes, to the enjoyments of an immortal existence with Him whom he had early learned to revere and love.

His illness, though severe and protracted, was borne with Christian patience, and death seemed rather a messenger of rest and release, than of terror or disappointment. His life-work was such as he could look back upon with pride and pleasure as the hour for his deliverance drew near, feeling assured that the profession had been honored by his fidelity to his calling; the state by an earnest, consistent and active citizen.

He was the son of Dr. Niles Manchester, a noted physician of Pawtucket many years ago; was born in the town of Johnston, R. I., February 7th, 1805, and received his early education in the school of the town. His earlier education completed, he entered Brown University, from which he was graduated with distinction in September, 1825.

His tastes and inclinations predisposed him to professional life, and he commenced the study of medicine with his father, which he pursued with ardor, and graduated with distinction from Harvard Medical College in 1828. He immediately began the practice of medicine with his father, in Pawtucket, and continued there until 1833; he then went to New York, where he remained for two years, and in 1835 returned to Providence, R. I., and practiced as an allopathic physician till 1840, when he returned to Pawtucket, where he passed the remaining years of his life. He was enrolled as an honored member of the Rhode Island Medical Society, with which he has ever been connected.

In 1840 he commenced the practice of homœopathy, which he had conscientiously adopted, and followed it until compelled to retire from business. In changing his method of practice the confidence of the public remained with him in the change, in full assurance that the knowledge he had gained during his previous years of experience, combined with his constant application, habitual careful examination and investigation, but the better fitted him for the practice of his profession.

His highly social temperament, urbanity of manner and perfect self-control, won for him a large and select circle of friends and patrons, whose friendship and confidence he has ever retained, becoming not only the oldest practitioner in the town but the most popular. He was one of the founders of the American Institute of Homœopathy, and an active member of the Rhode Island Homœopathic Society, having been president thereof for a number of years. He was also a member of Union Lodge, No. 10, A. F. and A. M., Pawtucket Royal Arch Chapter, No. 4, and Holy Sepulchre Commandery K. T.

In 1846 he was elected first president of the People's (now First National) Bank, and held the position four years, when he

declined re-election. He was intimately identified with the business interests of the town, and felt much pride in the growing prosperity of his native place. He was first to introduce illuminating gas into the town, in 1848. In 1847 he erected a large brick building with all modern improvements, and which was the first building illuminated with gas in the town, and still bears his name. He was a prominent citizen of Pawtucket and did much for the prosperity of the town and was highly esteemed.

He was twice married: first to Amelia Ames, of Providence, November, 1829, who died leaving three children, one son and two daughters, who survive him; second, to Kate E. Le Valley, of Pawtucket, who also survives him.

His funeral was attended by a large number of friends, and was conducted by the Masonic fraternity. The body was borne to its last resting-place at Swan Point by Doctors Clapp, Whitney, Morton, Budlong, Peck, and Hayes.

The testimony of those who knew him best is that he was a man of high moral and religious character, faithful in all his relations, kind and attentive to his patients, and generous to the poor, even to his own detriment.

CHRISTOPHER MINOT WELD, JAMAICA PLAIN, MASS.

Among the veterans of the Institute, formerly prominent in its assemblies and influential in its councils, none were more worthy of honor than Dr. Weld. Although from the failure of his health he had for several years abstained, almost entirely, from active practice, or participation in the proceedings of our Society, he ever retained the respect and esteem of his colleagues to which his character and learning entitled him; and the intelligence of his recent death has awakened sentiments of sincere regret in the hearts of all who knew him.

He was born in Boston, January 19th, 1812, and enjoyed in his youth the advantages of a liberal education. He graduated in arts at Harvard, in 1833. Among his classmates in college were many who have since become distinguished in science or letters. Of these, Professors Francis Bowen, Joseph

Lovering, H. W. Torrey, George E. Ellis, and Jeffries Wyman, and others not less eminent, might be mentioned.

He studied medicine in the office of Dr. George C. Shattuck, and graduated as Doctor of Medicine from the Harvard Medical School in 1837. During his medical pupilage he was not less fortunate in his associates than in his previous college course, for among others of subsequent note were such ornaments of the profession as Drs. N. B. Shurtleff, Oliver Wendell Holmes, Luther Clark, John O. Stone, Austin Flint, etc.

Dr. Weld commenced practice in Boston soon after his graduation, but in the following year removed to Jamaica Plain. In 1840, one of his patients, Mrs. David S. Greenough, went to New York to consult Dr. John F. Gray for a severe and protracted cephalalgia, that all previous treatment had failed to relieve. The homœopathic treatment was more successful. The lady returned home entirely cured, and so full of enthusiasm in favor of the system that had proved so beneficial to herself, that she inspired Dr. Weld with a desire to investigate its principles and examine its claims. To accomplish these objects more effectually he went to New York and spent some time there in conferences with Dr. Gray, and in the study of Hahnemann and other authorities of the new school, until his judgment was satisfied. He returned to Boston and soon after announced his full adhesion to homœopathy. He encountered the usual opposition, but persevered to a great success. The elder Drs. Wesselhœft and Wilde, and Drs. Gregg and Fuller, of Boston, were among his earlier friends and co-workers in the new school, in whose progress and improvement he became actively interested.

He united with others of the small band of earnest disciples of Hahnemann in founding this Institute in 1844.

After a successful career of over twenty years as a practitioner and representative of homœopathy, he was obliged, in 1862, to retire from active practice. Severe attacks of rheumatism and neuralgia so greatly interfered with his professional duties as to make his withdrawal a necessity. He made two different voyages across the ocean, and spent several years in Europe.

He died of pneumonia at his residence in Jamaica Plain, March 13th, 1878, aged 66 years.

He married, in 1839, Mary Ann P. Jarvis, of Boston, who survives him.

GEORGE BARROWS, A.M., M.D.

George Barrows, A.M., M.D., was born in Attleborough, Mass., May 12th, 1815. He graduated from Amherst College, 1840. Studied medicine with his brother, Dr. Ira Barrows, then of Norton, Mass., three years. During his medical curriculum he attended one course of lectures at Woodstock, Vt., and two courses at Pittsfield, Mass. He received his medical diploma at Pittsfield in 1847, and immediately located and commenced the practice of medicine in the now city of Taunton, Mass. He was married in 1848. In 1856 he attended a course of lectures at the Homœopathic Medical College, Philadelphia, and received a diploma from that institution. He was, from the first, an ardent practitioner and defender of medicine in accordance with the law *similia similibus curantur*. He was one of the early members of the Rhode Island Homœopathic Society, where his frequent attendance at the quarterly meetings and his cheering contributions in verbal and written reports of cases from practice were ever welcome. He was also a member of the Massachusetts Homœopathic Medical Society, and was elected to the Presidential Chair of that Society one term. In 1848 he joined the American Institute of Homœopathy.

From 1847 to 1878, thirty-one years, he was a successful practitioner and an ardent defender of homœopathic medicine. During these thirty-one years he received into partnership successively, and introduced into his ever-increasing field of labor, Doctors S. W. Graves, E. U. Jones, and J. W. Hayward, the two last of whom still occupy portions of the field. Dr. Daniel A. Babcock, a young gentleman of good promise, succeeds to his immediate practice. Stricken with a slight shock of paralysis, followed by brain fever, in the midst of usefulness and surrounded by a host of devoted friends, Dr. George Barrows departed this life on the 18th of January, 1878, in the 64th year of his age. He leaves a wife and son to mourn the loss of a dear and honored husband and father.

MARO McLEAN REED, M.D., JACKSONVILLE, ILL.

Few members of our fraternity have earned a more honorable record than the subject of this brief notice. Dr. Reed was born in East Windsor, Conn., October 18th, 1801, and died June 28th, 1877, having nearly completed his seventy-sixth year, fifty-two years of his life having been diligently and conscientiously given to his profession. He was the son of Dr. E. F. Reed, a highly esteemed physician, of advanced views, and received a liberal classical and scientific education. Graduating in arts from Yale College in 1822, he commenced the study of medicine under his father's direction, attending the usual courses of instruction at Yale, Castleton, and Pittsfield, at which latter college he received his medical doctorate. Chemistry and botany were favorite subjects of study with him, and he made more than one extended excursion in vacation-time in pursuit of the latter science.

His first field of practice was the neighboring village of Warehouse Point; but he soon removed to Hartford, where, in the course of two years, he acquired a very desirable clientage. In 1830 he married Elizabeth Lathrop, of Hartford. Soon after this, having observed some premonitory symptoms of a tendency to an affection of the lungs, he started with his young wife, and in company with a neighbor's family, in their own conveyances, for the distant wilds of Illinois. Inducements were offered him to establish himself in St. Louis, but having objections to Missouri as a slave State, he finally settled down at Jacksonville.

In several respects he soon found his views of medical practice were, even at that early day, decidedly opposed to the heroic methods of treatment generally pursued by the physicians of that region. From his favorite preceptor, Professor Tully, of New Haven, he had learned two important lessons that ever had a great influence upon his professional conduct. One was a prejudice, founded on reason and experience, against the then prevalent resort to bleeding, purgatives, calomel, and other depleting means of treating almost all diseases. The other was a persuasion of the importance of carefully and critically studying the causes of death in cases terminating fatally, in the hope of avoiding or preventing like results in other cases. Following

the teachings of his master in his conservative and supporting way of treatment, he was frowned upon and denounced by many of his professional brethren as an innovator; but was soon able to demonstrate by successful results the advantages of the innovation to the satisfaction of the community.

In 1848 his attention was called to homœopathy by Dr. Burritt, who had become a convert to the system of Hahnemann through the influence of Dr. John F. Gray, the venerable Nestor of our school in this country. His ingenious mental constitution, and his already advanced views in medicine, predisposed him to listen with attention and interest to the exposition of its principles. Though still incredulous, he was persuaded to test the method by experience, which he first did in his own family. Encouraged by his first experiments, he cautiously extended his investigations and study of the principles of homœopathy, with such success, that at length, after a remarkably favorable experience of twenty-five years as an allopathic physician, he avowed his complete adoption of the new system. To this conviction he ever after adhered with increasing enthusiasm to the time of his death, a period of twenty-seven years. His success as a physician was commensurate with the earnestness, judgment, and skill with which he exercised his art, and his influence has largely contributed to the remarkable estimation which homœopathy has attained in the region where he practiced.

In all other relations of life he was consistent with the motives and principles that guided his conduct and character as a medical man. A lifelong and intimate professional friend writes of him as follows: "Dr. Reed was full of good principles, pressed down and running over. He had a sharp, searching eye for the truth and the right, which when found he would cling to, to the death, if need be; yet he was full of the milk of human kindness, a warm friend, and never a bitter enemy of any one. I have seldom found his equal in all good qualities."

His last sickness, cystitis, was induced by a long ride over a very rough road to visit a patron of nearly fifty years' standing. His suffering was very severe, yet throughout its course he constantly surprised his attendants, and especially his physicians, by

his professional estimate of symptoms, the choice of remedies, and the progress of the disease.

He leaves a widow and five children, and a name and reputation which are a heritage more valuable than any worldly distinctions.

MERCY B. JACKSON, M.D., BOSTON, MASS.

The death of this estimable lady and accomplished physician deserves on many accounts a special and honorable commemoration in our annals. She was the daughter of Constant and Sarah Ruggles, of Hardwick, Mass., where she was born September 17th, 1802. Her education was of the substantial and practical kind, obtainable in the best schools of her native State.

In 1823 she married the Rev. John Bisbee, of Hartford, Conn., afterwards of Portland, Maine, where he died in 1829, leaving her with the care of two young children. During her widowhood she turned her talents and acquirements to good account as a teacher. In 1835 she married Captain Daniel Jackson, of Plymouth. In 1852 she was again left a widow, with a large accession to her family of children, the most of whom were dependent upon her for support; in all, she was the mother of eleven, including two pairs of twins.

During her residence in Plymouth she had become greatly interested in the subject of medicine as an art. Her own repeated experiences of maternity, and especially the care of so numerous a family, naturally afforded her opportunities for becoming acquainted with many forms of sickness and with the usual methods of treatment. Other circumstances greatly enlarged her means of observation and strongly impressed her with the manifest harshness and inefficiency of much of the prevailing practice. With convictions of this kind, derived from personal experience and quick observation, she was prepared to approve the milder methods and apparently more reasonable principles of homœopathy when presented to her.

When thrown a second time, at fifty years of age, upon her own resources, she conceived the design of qualifying herself, notwithstanding the obvious impediments to such a task, by a

regular course of study and preparation for the legitimate exercise of the medical profession according to the homœopathic method. This was no sudden resolution, but the result of much mental conflict with herself and many not very encouraging consultations with friends, but having adopted it, there was never afterwards any hesitation or vacillation. With the energy and determination of maturity, but with the enthusiasm of youth, she entered upon the difficult and wearisome task. Without in any respect neglecting the duties of her large and dependent family, she grappled with the unfamiliar technicalities and infinite details of medical science, and with discriminating judgment so divided her time as to devote to each department of duty its necessary proportion.

After the needful course of preparatory reading, she entered the New England Female Medical College, in Boston, as a student, and during the entire course was the equal in diligence, regularity, and progress of her younger sisters of the school, and received her well-earned degree of doctor of medicine in February, 1860, being then between fifty-seven and fifty-eight years old.

Such extraordinary conquest of obstacles attracted no little admiration, and inspired a confidence which can usually be gained only after years of successful practice, and Dr. Jackson speedily found herself the trusted medical adviser of an extensive circle of patients and families.

After a few years' practice in Boston with general acceptance, she made application to the American Institute of Homœopathy for admission to its membership. As the admission of women to the privileges of our Asssociation had not been contemplated or provided for in its organization, the proposed innovation aroused the liveliest opposition from many members, and the application was for several years successfully resisted. The progress of the contest is still familiar to the members of the Institute and need not here be described. Each year the application was renewed, and generally with an increasing body of supporters, until at length, in the session of 1871, in Philadelphia, she, together with two other physicians of her sex, was duly elected to full membership.

At the organization of the Boston University School of Medicine, in 1872, Dr. Jackson was appointed, in conjunction with Dr. N. R. Morse, to the chair of Diseases of Women and Children, a position which she continued to fill with entire satisfaction to the officers and faculty until her death. A similar position in New York was offered to her, which was declined.

She took an active interest in the medical education of women and in the various efforts for extending the means and opportunities of usefulness to her sex. She was a woman of unusual intellectual force and clearness, and was ready and able at all times to defend her opinions against all opponents. As a further evidence of her industry and perseverance, it may be mentioned that a few months before her death, at the age of seventy-five, she began the study of the German language.

She died of softening of the brain, December 13th, 1877, at her residence in Boston, after an illness of only a few weeks. Her funeral was attended by an immense assembly, who came to express the respect and admiration in which she was universally held. A special meeting of the University Medical School was convened for the same purpose, at which resolutions of sorrow and honorable commemoration were adopted.

MARCELLIN CÔTÉ, M.D.

The subject of this brief memoir was, at the time of his demise, one of the oldest and most distinguished homœopathic physicians of Pittsburg, Pa.

He was born in the town of Cacouna, Lower Canada, in the year 1815.

He graduated at the college of Nicolet, in the district of Three Rivers, Canada, in the year 1836. After graduating he engaged in teaching, and pursued this calling for two years.

His next step was to obtain a medical education. Compelled to rely upon his own exertions to attain this end, he removed to the United States, and matriculated in Bowdoin Medical College, Maine, supporting himself by giving lessons in the French language. From this institution he received the degree of M.D. in 1844. After receiving his medical degree he went to New

York city, where he passed a year and a half in the hospitals and dispensaries of the great commercial metropolis in gaining clinical experience. It was here he became acquainted with Dr. C. J. Hemple, from whom he received his first favorable impressions of homœopathy. Being convinced of its superiority over the old method which he had been taught and thus far practiced, he adopted it in 1847, removed to Pittsburg the same year, and entered the lists as a homœopathic physician, where he practiced for thirty-one years without a regret at having changed his medical faith.

Dr. Côté always took a lively interest in any measure calculated to further the spread of homœopathy and to advance the knowledge of its standard-bearers. He was a firm friend and good counsellor of the young physician, and a liberal patron of homœopathic literature.

His medical library is large and valuable. In 1852 he enriched the repertoire of homœopathy by clothing in an English dress the admirable brochure of Dr. C. Croserio on *Obstetrics, or the Aid the Art of Midwifery may Derive from Homœopathy*, and soon after that of Dr. Augustus Rapou, on *Typhoid Fever and its Homœopathic Treatment.*

In 1866 he took an active and leading part in establishing the Homœopathic Hospital and Dispensary of Pittsburg, Pa., and served two years as Chairman of its Executive Committee. He served one term as President of the Homœopathic Medical Society of Pennsylvania, and two terms as President of the Homœopathic Medical Society of Alleghany County, and at the time of his death was Chairman of its Executive Committee and President of the Anatomical Society of Alleghany County. He was liberal in the support of every measure calculated to advance the cause of homœopathy and to extend its benign influence.

He died May 29th, 1878, in the sixty-third year of his age, lamented alike by the profession, a large circle of personal friends, and a multitude of grateful patients. He suffered for several years with cystitis, and for some weeks preceding his decease very intensely; he had also external cysts of the kidneys. The homœopathic physicians of Pittsburg and Alleghany attended his funeral in a body, eight of them acting as pall-bearers.

An eminent physician, a steadfast friend, a kind husband, an indulgent father, and a good citizen, he commanded the respect and enjoyed the confidence of all. *Requiescat in pace.*

Dr. Côté was elected a member of the Institute in 1856.

HENRY D. ROBINSON, M.D., NEW BRUNSWICK, N. J.

This worthy member of our fraternity died in the city of his residence, November 22d, 1876, at the ripe age of seventy-eight years, twenty-seven of which he had passed in the same town.

He was of French parentage, but born in England, whither his family had sought refuge during the troubles of 1793.

His medical education was begun in Paris, but was completed in this country, to which he emigrated about 1829.

For a number of years he resided and practiced in New York, but about 1849, for the advantage of his wife's health, he removed to the vicinity of New Brunswick. Finding the place salubrious to his family and attractive to himself, he was induced to remain permanently. It is a matter of regret that so few particulars of the life of Dr. Robinson have been communicated to the writer, especially the time when and the circumstances that first drew his attention to homœopathy, of which for years he was an earnest exponent and advocate.

He was a man of robust and vigorous frame, inspired by an active and energetic spirit, and of a warm and generous heart and affectionate and sympathetic disposition, which made him a general favorite with all who knew him. He enjoyed and discreetly fulfilled the duties of a large practice, with almost uninterrupted continuance, till within a few weeks of his decease, scarcely ever himself experiencing the discomforts or disabilities of sickness. He was a member of several medical and scientific societies in this country and in Europe, and among the physicians of his own State he was regarded with general respect. He joined the Institute in 1872. His wife and an only daughter survive him.

LORAIN T. WEEKS, M.D., LACONIA, N. H.

Lorain T. Weeks, M.D., was born in Gilmanton, N. H., in 1819. He received a good common-school education, which was

supplemented by a more extended and liberal course at the Gilmanton Academy.

He then commenced the study of medicine with Dr. White, of that town. After the usual course of study he entered the medical department of Dartmouth College, where he graduated. He then commenced the practice of medicine in the town of Canterbury. After practicing allopathy for twelve years he became a convert to homœopathy, and continued a faithful believer till his death.

He also held many offices of public trust in the above town.

In 1866 he removed to Laconia, where he resided till he died, enjoying a large practice, and holding the full confidence of the community to a marked degree. At the time of his death he was Vice-President of the New Hampshire Homœopathic Medical Society, of which he was for several years an honored member.

Dr. Weeks was a man of high moral character, with a strong cultured mind, but of very unassuming manners.

He died, after quite a long illness, of calcareous deposit in the liver, July 19th, 1876.

WILLIAM J. BRYAN, M.D., OF CORNING, N. Y.

William J. Bryan, M.D., died in Geneva, N. Y., July 13th, 1877, where he had been under treatment for some few weeks, and, failing so rapidly, was unable to be removed to his home in Corning, N. Y. Dr. Bryan was born in Sonora, N. Y., December 5th, 1837. He received a liberal education in the academy at that place. He began the study of medicine in his twenty-third year, at Havana, N. Y., with his uncle, the late Dr. H. S. Benedict, then practicing in that town. He pursued his studies for two years, when he entered the army, under the command of Captain Compton, whose company was attached to the 141st Regiment of Volunteers. For bravery in the field he soon rose from the ranks to first lieutenant of the line. He participated with his regiment in the engagement of Lookout Mountain, where he was wounded in the arm, and, being sent home on furlough, remained there until the wound healed, when he returned to his regiment and took part with it in the closing

scenes of the war. He now again pursued the study of medicine and took a course of lectures at Cleveland, Ohio, when he began practice in Liberty, N. Y., where he remained in practice until the fall of 1868, when he returned to college and received his degree of Doctor of Medicine in the spring of 1869 from the Homœopathic Medical College of Cleveland, Ohio. Looking about for a place to practice, he accepted a partnership with his former preceptor, Dr. H. S. Benedict, who at that time had a very lucrative practice in Corning, N. Y. Their partnership lasted but a few weeks, when Dr. Benedict died, and the entire practice devolved upon Dr. Bryan.

Dr. Bryan was possessed of eminently fine abilities both as a physician and surgeon, and his success in practice was such as might have been predicted from his capabilities. He was a member of his county Medical Society and the Southern Tier Medical Society, in both of which he held high offices at the time of his decease. He was also a member of both the State Society and the American Institute.

His arduous duties in practice he performed always with a willing heart, attending alike both the rich and poor. Even when that fell destroyer, consumption, had taken such a strong hold upon him, during his last year of practice, he attended to his duties without a murmur. His standing in the community was such as any man might be proud to attain. As a gentleman he was open-hearted, courteous, ever ready to succor a friend in trouble.

He died of consumption in the fortieth year of his age, having continued in the active exercise of his profession until about four months before his decease, though rapidly declining in health for a year previous.

JACOB JEANES, M.D., PHILADELPHIA.

There has never been recorded in this department of the *Transactions* of the Institute the death of a man more deserving of honorable obituary, more thoroughly entitled to be called a good man, more mild-mannered, modest, and unobtrusive, than that of the revered Jacob Jeanes, M.D., whose death occurred December 18th, 1877, of apoplectic seizure, in his seventy-eighth year.

We cannot do better than here transcribe an address delivered before the members of the Philadelphia County Homœopathic Medical Society by its president, Dr. R. J. McClatchey, upon the occasion of a meeting called to do honor to the memory of their venerable and venerated departed colleague, together with the action of the Society at the same time. It is as follows:

"We are called together on a sad occasion. Death, who with equal foot strikes wide all doors, has been very busy of late with our notable men. Within the brief space of a twelvemonth, Hausmann and Von Grauvogl in Europe, and Carroll Dunham in America, have been called from their labors in this world to the life beyond; but just now we have been told that Clotar Müller, who was with us at our World's Convention, has also been called from this sphere of usefulness to meet his confrères in heaven, and we have met to-night to lament the loss and show respect to the memory of one who, after a long career of usefulness, quietly closed his eyes upon this world on Tuesday last, to open them upon that new and brighter vista—the heavenly rest.

"He was familiar to us all. His homœopathic medical life embraces almost the entire history of homœopathy in Philadelphia and in America, and in all its various epochs and phases he was a conspicuous figure. In its early practice and promulgation; in the establishment of its respectability; in the organization of its societies, colleges, hospitals, and other institutions; in the enlargement and development of its Materia Medica; in the elevation of its literature; in the instruction of its students; in the cultivation of amenities and ethics among its practitioners; in the setting a good example to his fellows; and, in fact, in all places where it was honorable for him to be, and in all departments of usefulness, he was prominent as a worker; although with so much modesty, with so much unobtrusiveness, with so remarkable an absence of egotism and self-love, that other men, with less, much less, real merit, but with a larger share of self-assertion, came to occupy in professional eyes the more conspicuous place, until the work of all these early practitioners began to be weighed and measured and valued, and then that of Dr. Jeanes was placed at its proper price, and he received the palm which he had earned, but not, indeed, without the powder.

"He was familiar to us all as a member, an active, efficient, working member of our Society, a regular debater, and a reader of carefully considered and ably prepared papers, and an attendant whose place was rarely vacant except when he was too ill to attend. He was for several successive terms our presiding officer, although, as he always said, he preferred the floor to the chair. We all know what a kindly nature his was; what a catholic spirit he had; how tolerant of the opinions of others, and how free in the expression of his own views. He was ever among the earliest in his place, among the most attentive of the auditory, giving as careful heed to the remarks of the youngest as to the utterances of the elders of the profession. His venerable head would bow in thoughtfulness ere he rose to speak, and then his views were given to his fellows with the utmost calmness, clearness, and precision, and, withal, with a certain winning force, if I may be allowed to use the expression, which had a marked effect. It is the truth that the influence of this man was a winning one; he did not push his hearers into his opinions, or force them to adopt his views by excluding from them all others; but he gently, mildly, quietly, but powerfully, *led* them to follow him. But his familiar presence will soon be to us a thing of the past; the place where he sat will know him no more forever; and yet, when we think of the long life of usefulness and of goodness, and of his peaceful death, and of his ever-living future, we should not mourn, while we may feel his loss and regret the severance of long-time association.

"Dr. Jacob Jeanes was born October 4th, 1800. His literary education was completed in Philadelphia, when he was about nineteen years old. He then returned to the 'old farm,' or old homestead, where he remained for about two years.

"On one occasion his father met the young man's old preceptor in the street, and, in a conversation about young Jeanes, the latter remarked that it was 'a pity to bury such talent in the dirt,' alluding to the retirement of the young man to his country home. The father, doubtless, pondered these words, and this led to his being placed under the preceptorship of the distinguished Dr. Joseph Parrish, one of the then faculty of the University of Pennsylvania, with whom he studied medicine

three years, attending lectures also at the University. He graduated Doctor in Medicine from this time-honored institution in 1823. He practiced as an allopathic physician during the ensuing twelve years, during which period he was for several years physician to the Almshouse and the Philadelphia Dispensary.

"He was attracted to homœopathy by seeing notices of it occasionally in the medical journals and other periodicals, and doubtless, too, by hearing cases of cures related by the laity; probably by members of the Society of Friends, of which he was a member, since that intelligent people were among the very first to espouse homœopathy as a superior system of medical practice.

"So great was his interest in the new system that he set himself the task of learning the German language, that he might study the works of Hahnemann, there being at that time no translations of the standard works on homœopathy.

"By degrees he became convinced of the correctness of Hahnemann's doctrines, remarking ere long, to use his own words, 'There is something in this.' He continued his investigations, however, during a period of eighteen months, at the end of which time he became so thoroughly convinced of the truth of the new practice that he at once adopted it as his method of treating the sick thereafter. This occurred in the year 1835. In 1838 he published a work on practice of great value, which was the first American homœopathic work translated into the German. It is a pity that he could not be induced to issue a new edition of this work in his later years, for he had a vast stock of experience from which to draw, some of which was unique, and all of it valuable.

"Dr. Jeanes was one of the original members of the American Institute of Homœopathy, and its president in 1845. He served very efficiently for several years as a member of the Bureau of Materia Medica of the Institute, or 'Central Bureau,' as it was formerly called, and in this capacity made many provings. We owe our knowledge of Benzoic acid chiefly to Dr. Jeanes, and our knowledge of many other drugs is also due in whole or in part to his devoted labors.

"He was one of the founders of the Homœopathic Medical

College of Pennsylvania in 1848, and was Professor of the Principles and Practice of Medicine in that institution in the years 1848–49.

"Such is a brief history of the character and work of the revered colleague who has been called away. It is our duty, as well as our mournful pleasure, on this occasion, to testify to his worth and to our feelings in regard to his decease, by the adoption of preambles and resolutions expressive of the same, and by paying individual tributes to his worth."

DR. HENRY N. GUERNSEY moved that the address of the President be adopted by the Society by a rising vote, as expressive of the opinion of its members in regard to the character and merits of Dr. Jeanes, and of their feeling in regard to his death.

DR. BUSHROD W. JAMES seconded the motion of Dr. Guernsey, and it was therefore adopted unanimously, the members rising.

DR. AUGUSTUS KORNDŒRFER then offered the following preamble and resolution, which were unanimously adopted:

"WHEREAS, It hath pleased the Almighty to remove from our midst, through death, our revered fellow-member, Dr. Jacob Jeanes; and

"WHEREAS, In his life we recognize that of the true man, in kindness, goodwill, and earnestness, only excelled by its purity; and

"WHEREAS, In his death we, as a Society and as individuals, have suffered an almost irreparable loss; therefore

"*Resolved*, That this Society extend to his widow most heartfelt sympathy in this her sore affliction, yet with the feeling that words can but poorly express our sense of this double loss to her and to us. We would share, though we may not lighten, the grief. True comfort can only be derived through that faith which has power not only to alleviate, but may even sanctify, our sorrows."

CLOTAR MÜLLER, M.D., LEIPSIC, GERMANY,

Honorary member of the American Institute of Homœopathy, was born at Leipsic, August 25th, 1818; died at Lugano, November 10th, 1877.

Dr. Müller was the son of the veteran Moritz Müller, so closely connected with the history of homœopathy. After finishing his studies the son became assistant to his father at the Polyclinic in Leipsic, and after the demise of his father he remained its senior physician for many years.

Literature attracted him at an early age, and his *Repertory* is far the best ever issued. Müller and Veit Mayer founded the *Homœopathic Quarterly*, of which they continued joint editors from 1850 to 1853, and Müller alone from 1853 to 1864. In 1872 he became editor of the *International Presse*, and remained its leading spirit up to his death. In 1876 he was the guest of our Centennial, and his genial manners, his earnestness for our cause, and his love for our institutions, will never be forgotten by those who enjoyed close communion with him during the few weeks he honored us with his presence.

Requiescat in pace.

LXIV.

REPORT

OF THE

COMMITTEE ON MEDICAL LITERATURE.

BY J. D. BUCK, M.D., CINCINNATI, O.

In any estimate of the annual literary labor performed for or by the profession, that devoted to medical journalism should take first rank. Not always appreciated, seldom well paid, this kind of literary labor nevertheless has a very marked influence; not only as it records, but as it furthers medical progress. To edit a medical journal successfully requires an amount of labor, forbearance and self-denial, which in other departments of life would rank as sanctity; and yet our medical editors enjoy a "skrimmage" too well for saints. Then, again, there is the sinking fund which somebody must shoulder, for very few journals pay expenses the first year or two. As a rule doctors are not exact and prompt business men, and when a large subscription list is obtained, it does not always "pan out" well, but often needs weeding, before a list of paying subscribers is reached. Notwithstanding all these disadvantages, ambitious gentlemen, sanguine of success and burdened with shekels, remain. Two American and one Anglo-American journals have appeared in the past few months. *The American Homœopathist* has put in a regular appearance, a credit, both as to matter and

manner, to its editor and to the profession. Having reached the ripe age of two and a half years, surviving the severer trials of infancy, it may be said to be a child both of credit and promise.

The rivalry heretofore existing between Chicago and St. Louis, is by no means confined to vital statistics, and we hope the *Clinical Review* will need no more apology for years of future usefulness, than its "Salutatory" gives for its first appearance. It was evidently not "conceived" by chance, nor is there any evidence of any unbecoming interruption, such as, "Pray, my dear, have you not forgot to wind up the clock?" "With a free lance it advances into the journalistic realm," and as freely is it welcomed. There is good blood in its veins. Truly is it a child of promise. "Pure Homœopathy" has not assailed in vain the "Physiological Livery" and has now both an "Organ" and an "Organon." The "Declaration of Homœopathic Principles" is a timely protest, against much which passes for homœopathy, but which better deserves the name of Eclecticism, in the face of which, it is well to have at least one able representative of the old faith, which has already overcome mountains, and it were better for us all, and better for the sick, if genuine homœopathy were better known and more generally practiced.

From the West come regularly our old friends the *American Observer* and the *United States Medical Investigator*, while from the East we hail the *New England Medical Gazette*, the *Hahnemannian Monthly*, and the *Homœopathic Times*. The old *North American* is as sound, ripe and full of vitality as its indefatigable editor, and who like (s) old wine grows still better with age. With great difficulty we have hitherto repressed one member of this happy family; its editor, rejuvenated in a Southern clime, boldly *Advances* to the front on every conceivable occasion, except when he tries to be funny. His warmed-over jokes, after all, are like Paddy's wall, nine feet wide and seven feet high, "and if it falls over, it will be higher thin iver, be jabers." And yet the *Advance* is no joke of a journal. Even the Pacific slope sends its ambitious representative, and so we have a group of semi-monthly, monthly and quarterly visitors, which show no uncertain front, but make up an annual record of which we may well

be proud. No doubt much contained therein might be profitably eliminated. The work of busy hands, these volumes contain many valuable papers and suggestions, without which there would be little to break in upon the ruts and routine of daily professional toil.

Though the past year has not been unusually prolific of pretentious volumes, several deserving special recognition have nevertheless appeared. Second to none of these stands the *Science of Therapeutics* by our lamented Dunham, a work well deserving the title and the honor which it bears. The seventh volume of the *Encyclopedia of Materia Medica*, completed, proves the ability of young men to do more than "dream dreams," and yet vast and admirable as is the labor here accomplished, we have yet only a dream of the *Materia Medica*, the mazes of which shall one day take form, and speaking no uncertain language, guide us in the way of all therapeutic truth.

Again are we indebted to that modest and profound scholar Dr. George E. Shipman for transplanting from a foreign soil the fruit which needs no other recommendation than the fact that he deemed it worthy his labors. Dr. Panelli could receive no higher compliment for his work, in America, than this. Then we have Dr. R. D. Hale's *Diseases of the Chest*, Prof. Franklin's long-looked-for work on *Spinal Curvature*, Hart on *Diseases of Brain and Eye*, Prof. Richardson's *Obstetrics*, new and enlarged editions of *Guernsey's Obstetrics*, and *Angell on the Eye*. All of these have received attention in our medical journals, and need only be named in this connection. Incomplete as is the list here presented, when all is said still more incomplete is our medical literature.

Reports of clinical cases contain a bushel of chaff to a grain of wheat. Many articles are not only pointless, but apparently aimless. Occasional cures with a single remedy in high dilution are reported, and the exact relation between drug and disease pointed out. We need more of these cases in our journals, so that by and by, when gathered up, they will be of practical value. We know that such cases frequently occur, and are lost in the busy whirl of professional life.

Many of the cases reported are from beginners in practice. These are as likely to be of value as any other, provided due care is exercised in discriminating between empirical and scientific methods. To these aspirants we should say, do less writing, and better.

> "If thou wouldst be thought a sage,
> Think a volume, write a page;
> Then from every page of thine,
> Publish but a single line."

LXV.

CONSTITUTION AND BY-LAWS.

CONSTITUTION.

(ADOPTED JUNE 10TH, 1874.)

ARTICLE I.—NAME AND OBJECT.

This Association shall be styled the AMERICAN INSTITUTE OF HOMŒOPATHY, and its object the improvement of homœopathic therapeutics and all other departments of medical science.

ARTICLE II.—MEMBERS.

The Institute shall be composed of those physicians who are already members, and of such others as may be hereafter chosen in conformity with the By-laws.

ARTICLE III.—OFFICERS.

The officers of the Institute shall be a President, Vice-President, a General Secretary, a Provisional Secretary, and a Treasurer, with such other officers as shall be designated by the By-laws, to be chosen at such time, in such manner, for such a period, and with such duties, as these By-laws shall ordain.

ARTICLE IV.—SEAL.

The Institute shall have and use one common seal, with a suitable device and inscription.

ARTICLE V.—AMENDMENTS.

This Constitution may be altered or amended by a vote of two-thirds of all the members present at the regular annual meeting, provided that notice of such alteration or amendment shall have been given in writing at a previous annual meeting of the Institute.

BY-LAWS.

(ADOPTED JUNE 20TH, 1878.)

ARTICLE I.—MEETINGS.

THE Institute shall hold at least one session in each year, at such time and place as may be determined upon from time to time.

ARTICLE II.—OFFICERS.

SECTION 1. The officers shall be elected by ballot at each annual session of the Institute (with the exception of the General Secretary, as hereinafter provided), and shall enter upon their respective duties the first day of January following.

SECTION 2. The officers of the Institute, viz., the President, Vice-President, General Secretary, Provisional Secretary and Treasurer, shall constitute an Executive Committee, which shall arrange the business of the meetings, attend to matters of business not otherwise specially provided for, and perform such other duties as may by vote of the Institute devolve upon it.

SECTION 3. The General Secretary shall be elected for a period of five years (removable only for cause), and shall be paid an annual salary of one thousand dollars.

ARTICLE III.—DUTIES OF OFFICERS.

SECTION 1. The President shall preside at the meetings of the Institute and perform the duties usually pertaining to his office, together with such others as may by vote of the Institute devolve upon him. He shall sign all certificates of membership. He shall deliver an address at the opening of each session on the progress of Homœopathy during the year past, and make such suggestions as he may deem necessary for the Institute to take action on during the session.

SECTION 2. The Vice-President shall perform the duties of the President in his absence or disability.

SECTION 3. The General Secretary shall keep a record of the proceedings of the meetings, conduct the correspondence of the Institute, issue notices of meetings, notify candidates of their election, sign certificates of membership, and perform such other duties as the Institute may direct.

SECTION 4. The Provisional Secretary shall assist the General Secretary, and in his absence perform his duties.

SECTION 5. The Treasurer shall receive all money belonging to the Institute, and make all disbursements under the recommendation of the Executive Committee. He shall furnish at each annual meeting a written report of the condition of the finances.

ARTICLE IV.—CENSORS.

At each annual session the Institute shall elect, by ballot, a board of five censors (three of whom shall constitute a quorum), who shall receive and examine the credentials of candidates for membership, and report to the Institute for election such as may be found properly qualified. The censors shall enter upon their duties on the first day of January following their election.

ARTICLE V.—MEMBERSHIP.

SECTION 1. Candidates for membership shall present to the Board of Censors a certificate of three members of the Institute that the applicant has pursued a regular course of medical studies, according to the requirements of the existing institutions of this country, and sustains a good moral character and professional standing. Such certificate shall state when and where the applicant obtained a diploma. If found qualified the candidate may be elected a member. No person shall be considered a member, however, before paying an admission fee of five dollars, and the annual dues, which shall entitle him to a certificate of membership.

SECTION 2. Any physician properly accredited as a delegate, shall be admitted during the session of the Institute to all the privileges of members, except voting and eligibility to office, on the following basis:

First. From every association composed of more than fifty members from different States, two delegates, with an additional delegate for every twenty members.

Second. From every State Society, two delegates, with an additional delegate for every twenty members.

Third. From every county or local society, one delegate.

Fourth. From every college, hospital, asylum for the insane, or dispensary, actually established, one delegate.

Fifth. From every medical journal published one delegate.

Such delegates shall be elected for the term of one year.

SECTION 3. Any foreign physician may be elected a Corresponding Member of the Institute at any annual meeting, and

shall have all the privileges of members except voting and eligibility to office.

SECTION 4. The Institute may, at any annual meeting, elect as Honorary Members, not to exceed five in one year, any foreign physicians who may be judged worthy from their superior attainments in medicine; provided that the names of persons proposed for Honorary Membership shall have been presented at a previous annual meeting. Such Honorary Members shall have all the privileges of members except voting and eligibility to office.

SECTION 5. All members of the Institute who have maintained twenty-five consecutive years of membership shall be considered *senior members*, and be exempt from the payment of annual dues; and the names of such members shall be printed first in the list of members, in capital letters.

SECTION 6. Of State Societies represented in the Institute, the Presidents shall be *ex-officio* Vice-Presidents, and the Recording Secretaries shall be *ex-officio* Corresponding Secretaries of the Institute, and these officers shall communicate through the various bureaus any facts or information concerning the condition of these societies, and the progress of medicine and homœopathy in their several States.

ARTICLE VI.—DUES.

SECTION 1. Members shall pay annually the sum of seven dollars toward defraying the expenses of the Institute. The *Proceedings of the Institute* will be sent to those members only who have paid their dues.

ARTICLE VII.—BUREAUS AND COMMITTEES.

SECTION 1. The following BUREAUS shall be appointed as hereinafter provided for:

a. Materia Medica, Pharmacy, and Provings.

b. Clinical Medicine, embracing Diagnosis and General and Special Therapeutics.

c. Obstetrics.

d. Gynæcology.

e. Pædology.

f. General Sanitary Science, Climatology and Hygiene.

g. Surgery.

h. Anatomy and Physiology.

i. Microscopy and Histology.

j. Psychological Medicine.

k. Ophthalmology, Otology, and Laryngology.

l. Organization, Registration, and Statistics.

SECTION 2. Each of these bureaus shall consist of at least seven members.

SECTION 3. Each bureau, in its annual report, shall present a résumé of discoveries and progress in their respective fields, together with papers upon their special subjects selected for inquiry and discussion.

SECTION 4. The following STANDING COMMITTEES shall be appointed, as hereinafter provided for:

a. Legislation.

b. Medical Literature.

c. Foreign Correspondence.

d. Medical Education.

e. An Intercollegiate Committee.

SECTION 5. Each of these committees shall consist of at least five members, except the Intercollegiate Committee.

SECTION 6. Immediately upon the closing of a bureau the President shall appoint a chairman for the ensuing year; and the chairman so appointed shall form his own bureau, handing to the President a list of its members, so that it may be announced before the close of the session.

SECTION 7. The chairman of each bureau, as soon as possible after appointment, shall call his associates together and organize his bureau by the appointment of a secretary; and, being duly organized, the bureau shall select a special subject upon which to labor, and report at the next meeting of the Institute.

SECTION 8. No bureau shall submit for discussion and publication any papers not relating to the special subject agreed upon at the beginning of the year, except such as may be included in the general résumé.

SECTION 9. No report or paper shall be received by the Institute in an incomplete or unfinished condition; and no paper shall be published in the *Transactions* which has been previously published, or which is not handed to the General Secretary within thirty days after the close of the session.

SECTION 10. Immediately upon the reception and disposition of the report of a standing committee, the President shall appoint the committee for the following year, except the Intercollegiate Committee, which shall be made up of two delegates from each college.

SECTION 11. No paper shall be read from any bureau or committee requiring over fifteen minutes, without unanimous consent, but an abstract of the same may be presented.

SECTION 12. The *Transactions* of the Institute shall be issued

by the General Secretary within three months after the close of the session, and copies shall be delivered to those entitled to them without individual expense.

SECTION 13. All reports by delegates from various societies and institutions shall be limited to five minutes each.

SECTION 14. In all discussions no speaker shall be allowed more than five minutes, nor to speak more than once upon the same subject, without a vote of consent, taken in the usual manner.

SECTION 15. Members neglecting the payment of dues for three years, after proper notification from the Treasurer, shall have their names dropped from the roll of membership.

SECTION 16. The Executive Committee shall constitute the Committee of Publication.

ARTICLE VIII.

SECTION 1. Members violating the provisions of the Code of Ethics adopted by the Institute, shall be expelled, or placed under censure, by a vote of two-thirds of the members present, upon satisfactory proof of such violation.

ARTICLE IX.—AMENDMENTS.

These By-laws may be altered or amended by a vote of two-thirds of the members present at any annual meeting.

LXVI.

RESOLUTIONS.

ADOPTED JUNE 8, 1854.

Resolved, That we regard the homœopathic law as coextensive with disease, and that a resort to any other medicinal means than those pointed out by the law *similia similibus,* is the result, in part, of the incompleteness of our Materia Medica, but mainly the result of a want of sufficient knowledge on the part of the physician, of those remedies already possessed by our school, and not of an insufficiency of the homœopathic law.

Resolved, That the pharmaceutists of the homœopathic school be recommended to use, in the preparation of drugs by trituration, the proportions of ten grains of the drug to ninety grains of sugar of milk; and, for the sake of uniformity, to retain the numerical designation adopted by Hahnemann, and continued by the majority of homœopathic physicians.

ADOPTED JUNE 4, 1857.

Resolved, That it is the duty of the American Institute of Homœopathy to extend a fostering care to the homœopathic medical colleges of the United States, and exert its influence in directing students of medicine who are seeking admission to the honors of the profession to their halls for instruction.

Resolved, That the American Institute of Homœopathy does not necessarily indorse the doctrines contained in the reports of committees by accepting and publishing such reports with the Proceedings.

ADOPTED JUNE 7, 1867.

Resolved, That, in the organization of life insurance companies which discriminate in favor of practical homœopathists, we recognize an important instrumentality, which by showing the superiority of homœopathic treatment, will contribute to the

more rapid adoption of the principles of medical science promulgated by the illustrious Hahnemann; and that, whenever practicable, the members of this Institute will give to such organization a united and cordial support.

ADOPTED JUNE 9, 1869.

Resolved, That the Bureau of Clinical Medicine be requested to give attention to the collection of clinical verifications of the symptoms contained in our Materia Medica, and to include such verifications in their reports, with whatever details they deem proper, giving credit to the authors.

Resolved, That the Institute invite State societies to co-operate in this work of clinical verification of the Materia Medica.

ADOPTED JUNE 8, 1870.

Resolved, That each member of the American Institute will best subserve the interest of homœopathic medicine by using great care to avoid accepting any student of medicine into his office who does not or cannot give evidence of possessing the preliminary education recommended in the report of the Committee on Education.

Resolved, That the resolution relating to qualification apply to all students whose term of pupilage shall commence subsequent to the year 1870, and that every effort be made to acquaint the profession at large with the action of the Institute.

ADOPTED JUNE 9, 1874.

Resolved, That hereafter all provings by a single prover, presented through the Bureau of Materia Medica, Pharmacy, and Provings, be referred back to the bureau, to be retained by them until a sufficient number of provings are obtained to warrant the bureau in collating the same and presenting them to the Institute for publication; and such collation and presentation shall be a part of the duty of that bureau.

ADOPTED JUNE 12, 1874.

Resolved, That the bureaus of the Institute that pertain to practical medicine and surgery be hereafter arranged in rotation, so that each one may come first in its turn in successive years.

ADOPTED JUNE 15, 1875.

Resolved, That *Sectional Meetings* of any bureau may be held

at the call of the chairman of that bureau, provided such meetings are not held during the sittings of the Institute.

Whereas, It is now a difficult matter to obtain mortuary reports from many of our cities and towns, therefore

Resolved, That this body would recommend to the members of the Institute, that they, in their respective cities and towns, where published reports are to be had, obtain and furnish annually to the Bureau of General Sanitary Science, Climatology and Hygiene, a copy of such published reports; and further, that when such reports are made up, State statistical mortuary reports be likewise sent to this bureau.

Resolved, That in States, cities, and towns where these reports are not made and published, they be urged to publish them for the general good of the country, as well as for local advantages.

ADOPTED JUNE 27, 1877.

Resolved, That all papers rejected by the Committee of Publication and not published with the *Transactions* of the Institute, be referred back to their authors by the General Secretary, to be disposed of as they may see fit.

ADOPTED JUNE 29, 1877.

Resolved, First. That the Committee of Arrangements in preparing the Order of Business for future meetings of the Institute, be requested to set apart a certain time for hearing reports from delegates from institutions and societies who may be present at the meeting, such reports to be limited to five minutes each.

LXVII.

MEMBERS.

The ? denotes that the residence is doubtful; the figures show the date of membership. Members are requested to inform the General Secretary of any change in the address of any of the members.

The following is a part of the By-laws adopted June 20th, 1878:

ARTICLE VII, SECTION 16: Members neglecting the payment of dues for three years, after proper notification from the Treasurer, shall have their names dropped from the roll of membership.

SENIOR MEMBERS.

1853. ANGELL, HENRY C., M.D., 16 Beacon St., Boston, Mass.
1846. ANNIN, J. D., M.D., Newark, N. J.
1844. BALL, ALONZO S., M.D., 43 W. 11th St., New York.
1853. BARNES, GEORGE W., M.D., San Diego, Cal.
1846. BARROWS, IRA, M.D., Providence, R. I.
1846. BAYARD, EDWARD, M.D., 8 W. 40th St., New York.
1846. BELCHER, GEORGE E., M.D., 43 E. 21st St., New York.
1846. BERENS, BERNARD, M.D., 1507 Arch St., Philadelphia.
1846. BERENS, JOSEPH, M.D., S. W. cor. Broad and Green Sts, Philadelphia.
1853. BISSELL, ARTHUR F., M.D., 157 Maiden Lane, New York.
1845. BOARDMAN, J. C., M.D., Trenton, N. J.
1853. BRAINERD, JEHU, M.D., Washington, D. C.
1848. BURKE, A. C., M.D., 142 Union St., Brooklyn, N. Y.
1844. CATOR, H. HULL, M.D., Roxbury, N. Y.
1847. CHASE, HIRAM L., M.D., Cambridge, Mass.
1846. CLARK, ELIPHALET, M.D., Portland, Me.
1844. CLARK, LUTHER, M.D., 55 E. Newton St., Boston, Mass.
1850. CLARK, J. K., M.D., 11 Kearney St., San Francisco, Cal.

1851. COLLINS, H. A., M.D., Springfield, Mass.
1848. COOK, ABIJAH P., M.D., Hudson, N. Y.
1848. CUMMINGS. J. M., M.D., Portland, Me.
1852. DAKE, JABEZ P., M.D , 47 N. Vine St., Nashville, Tenn.
1851. DENISON, JEREMIAH T., M.D., Fairfield, Conn.
1844. DETWILER, H., M.D., Easton, Pa.
1847. DODGE, MOSES, M.D., Portland, Me.
1848. DONOVAN, THOMAS W., M.D., Tompkinsville, Staten Island, N. Y.
1847. DOUGLAS, J. S., M.D., Milwaukee, Wis.
1846. EHRMAN, BENJAMIN, M.D., 46 W. 7th St., Cincinnati, O.
1846. EHRMAN, F., M.D., 84 W. 7th St., Cincinnati, O.
1850. FOOTE, GEORGE F., M.D., Stamford, Conn.
1844. FULLER, MILTON, M.D., 35 Essex St., Boston, Mass.
1844. GALLUPE, WILLIAM, M.D., Bangor, Me.
1851. GAMBELL, W. P., M.D., 2 Rutland St., Boston, Mass.
1849. GARDINER, DANIEL R., M.D., Norristown, Pa.
1844. GRAY, JOHN F., M.D., Fifth Avenue Hotel, New York.
1848. GUERNSEY, EGBERT, M.D , 18 W. 23d St., New York.
1846. GUERNSEY, HENRY N , M.D., 1423 Chestnut St., Phila.
1847. GUY, SAMUEL S., M.D., 179 Remsen St., Brooklyn, N. Y.
1846. HALLOCK, LEWIS, M.D., 34 E. 39th St., New York.
1852. HAMMOND, MILTON, M.D., 57 N. Paca St., Baltimore, Md.
1846. HELMUTH, WM. S., M D., 1904 Spruce St., Philadelphia.
1853. HELMUTH, WM. TOD, M.D., Madison Avenue, New York.
1846. HEMPEL, CHARLES J., M.D., Grand Rapids, Mich.
1844. HERING, CONSTANTINE, M.D., 112 N. 12th St., Philada.
1846. HOLT, DANIEL, M.D., Lowell, Mass.
1846. JONES, E. DARWIN, M.D., Albany, N. Y.
1853. JOSLIN, BENJAMIN F., M.D., 50 W. 29th St., New York.
1848. KEEP, LESTER, M.D., corner Gates and Vanderbilt Avs., Brooklyn, N. Y.
1853. KENYON, L. M., M.D., 86 W. Mohawk St., Buffalo, N. Y.
1844. KIMBALL, DANIEL S., M.D., Sackett's Harbor, N. Y.
1848. KOCH, A. W., M.D., 118 N. 12th St., Philadelphia.
1845. LIPPE, ADOLPH, M.D., 1204 Walnut St., Philada.
1844. MCMANUS, F. R., M.D., 71 Franklin St., Baltimore, Md.
1845. MCVICAR, J. A., M.D., 130 E. 17th St., New York.
1848. MARCY, ERASTUS E., M.D., 1 W. 34th St., New York.
1848. MUNGER, ERASTUS A., M.D., Waterville, N. Y.
1844. NEIDHARD, CHARLES, M.D., 1511 Arch St., Philada.
1848. NORTON, LUCIAN H., M.D., Bridgeport, Conn.
1844. PAINE, HENRY D., M.D., 26 W. 30th St., New York.
1850. PAINE, HORACE M., M.D., Albany, N. Y.

1848. PALMER, MILES W., M.D., 235 E. 18th St., New York.
1853. PARKS, JOHN M., M.D., Hamilton, O.
1847. POOLE, AUGUSTUS, M.D., 232 W. 1st St., Oswego, N.Y.
1844. PULTE, JOSEPH H., M.D., 293 Walnut St., Cincinnati, O.
1848. RAYMOND, JONAS C., M.D., 248 Genesee St., Utica, N.Y.
1848. READING, J. R., M.D., Somerton, Pa.
1846. RHEES. MORGAN J., M.D., Wheeling, W. Va.
1847. RICHARDSON, EDW. T., M.D., 141 Montague St., Brooklyn, N. Y.
1849. RODMAN, WILLIAM W., M.D., New Haven, Conn.
1844. ROBINSON, HORATIO, M.D., Auburn, N. Y.
1848. RUSSELL, GEORGE, M.D., 14 Lynde St., Boston, Mass.
1847. SAWYER, B. E., M.D., Haverhill, Mass.
1844. SCHMIDT, J., M.D., 92 Eutaw St., Baltimore, Md.
1847. SHACKFORD, RUFUS, M.D., Portland, Me.
1846. SHEPARD A., M.D., Glendale, O.
1853. SKILES, F. W., M.D., 160 Remsen St., Brooklyn, N.Y.
1846. SMALL, ALVIN E., M.D., 583 Wabash Av., Chicago, Ill.
1848. SMITH, D. S., M.D., 402 Michigan Av., Chicago, Ill.
1850. SPRINGSTEED, DAVID, M.D., Albany, N. Y.
1846. STEVENS, C. A., M.D., Scranton, Pa.
1852. STEVENSON, T. C., M.D., Carlisle, Pa.
1844. SWAZEY, GEORGE W., M.D., Springfield, Mass.
1848. TAFT, CHARLES A., M.D., Hartford, Conn.
1853. TALBOT, I. T., M.D., 66 Marlboro St., Boston, Mass.
1847. THAYER, DAVID, M.D., 94 Boylston St., Boston, Mass.
1844. WARD, ISAAC M., M.D., Newark, N. J.
1844. WARD, WALTER, M.D., Mount Holly, N. J.
1848. WARNER, LEWIS T., M.D., 39 E. 19th St., New York.
1848. WELLS, LUCIEN B., M.D., 225 Genesee St., Utica, N. Y.
1844. WELLS, P. P., M.D., 84 Clinton St., Brooklyn, N. Y.
1847. WHITTLE, JOSHUA F., M.D., Nashua, N. H.

MEMBERS.

1870. Abell, D. T., M.D., Sedalia, Mo.
1872. Abercrombie, Wm. H., M.D., Jersey City, N. J.
1873. Adams, Julia A., M.D., Corry, Pa.
1871. Adams, Myron H., M.D., Palmyra, N. Y.
1876. Adams, Reuben A., M.D., Rochester, N. Y.
1867. Albertson, J. A., M.D., 34 Eddy St., San Francisco, Cal.
1873. Allen, George D., M.D., Portland, Mich.
1872. Allen, Henry C., M.D., Detroit, Mich.

1871. Allen, Richard C., M.D., 4708 Paul St., Frankford, Philadelphia.
1866. Allen, Timothy F., M.D., 10 East 36th Street, New York.
1860. Alley, James T., M.D., St. Paul, Minn.
1875. Alling, C. P., M.D., Bradford, Pa.
1868. Alvord, Samuel, M.D., Chicopee Falls, Mass.
1876. Andrews, Purnell W., M.D., Camden, N. J.
1871. Andrews, William J., M D., Newark, N. J.
1869. Arcularius, Philip E., M.D., 57 E. 21st St., New York.
1869. Arthur. A. A., M.D., Vergennes, Vt.
1874. Arthur, Charles, M.D., Scranton, Pa.
1858. Ashton, A. H., M.D., 730 S. 10th St., Philadelphia.
1871. Aten, Henry F., M.D., 34 Hanson Place, Brooklyn, N. Y.
1875. Austin, John, M.D., Norwalk, O.
1871. Bacon, Charles A., M.D., 104 E. 35th St., New York.
1867. Baer, O. P., M.D., Richmond, Ind.
1874. Baethig, Henry, M.D., Buffalo, N. Y.
1875. Bahrenburg, William N., M.D., 2409 N. 14th St., St. Louis, Mo.
1867. Bailey George W , M.D., Elizabeth, N. J.
1874. Bailey, Silas, M.D., Toledo, O.
1872. Baker, Mary G., M D., Worcester, Mass.
1875. Baker, Milton H., M D., Highland Park, Ill.
1871. Baldwin, Aaron, M.D., 1017 M St., N. W., Washington, D. C.
1876. Baldwin, Harry D., M.D., Montrose, Pa.
1857. Baldwin, Jared G., M.D., 8 E. 41st St., New York.
1866. Baner, William J., M.D., 13 E. 32d St., New York.
1876. Banks, James O., M.D., Philadelphia.
1867. Barker, William C., M.D., Waukegan, Ill.
1875. Barr, Frank H., M.D., Cleveland, O.
1868. Barrows, George S., M.D., San Jose, Cal.
1857. Bartlett, A. R., M.D., Aurora, Ill.
1867. Bartlett, Edward G., M.D., 43 E. 11th St., New York.
1873. Bartlett, Henry H., M.D., Ashtabula, O.
1868. Baxter, H. H., M D., Cleveland, O.
1867. Baylies, B. L. B., M.D., Astoria, N. Y.
1868. Bancroft, Walton, M.D., Keokuk, Iowa.
1877. Barnes, Lewis, M.D , Delaware, O.
1877. Barrett, Albert R., M.D., Nashville, Tenn.
1870. Beaumont, John H., M.D., Freeport, Ill.
1878. Beckr, Fred. W., M.D , Aurora, Ind.
1877. Beebe, Clarence E., M.D., 21 W. 37th St. N. Y.

1870. Beebe, E. W., M.D., Evansville, Wis.
1869. Beebe, A. G., M.D., 81 Park Ave., Chicago, Ill.
1876. Beebe, Harry E., M.D., Sidney, O.
1876. Bennett, Robert A., M.D , Dover, N. J.
1865. Beckwith, D. H., M.D., Cleveland, O.
1871. Beckwith, E. C., M.D., Columbus, O.
1857. Beckwith, Seth R., M.D., 161 W. 7th St., Cincinnati, O.
1875. Bedell, R. Heber, M.D., Madison Av. near 175th St , New York.
1868. Bell, James B., M.D., Augusta, Me.
1867. Bell, James S., M.D., Cedar Falls, Iowa.
1857. Bell, William C., M.D., Middletown, Conn.
1877. Bellows, Howard P., M.D., Boston, Mass.
1872. Bender, Prosper, M.D., Quebec, Dominion of Canada.
1875. Bennett, Asahel M., M.D., Rochester, N. Y.
1869. Bennett, Hollis K., M D., Fitchburg, Mass.
1865. Benson, P. Oscar C., M.D., Skaneateles, N. Y.
1874. Bennit, William W., M.D., 921 New York Avenue, Washington, D. C.
1872. Berghaus, Alex., M.D., 231 W. 41th St., New York.
1870. Betts, B. Frank, M.D., 1700 Girard Av., Philadelphia.
1869. Bevin, William A., M.D., Trenton, N. J.
1854. Bigelow, Franklin, M.D., 110 S. Salina St., Syracuse, N. Y.
1868. Biggar, Hamilton F., M.D., Cleveland, O.
1876. Bigler, William H., M.D., Philadelphia, Pa.
1871. Bingaman, C. F., M.D., 294 Penn. Av., Pittsburg, Pa.
1854. Bishop, D. F., M.D , Lockport, N. Y.
1869. Bishop, Herbert M., M.D., Norwich, Conn.
1870. Bishop, Llewellyn A , M.D., Fond du Lac, Wis.
1869. Bishop, R. S., M.D., Medina, N. Y.
1872. Blake, Mary J. Safford, M.D., 3 Hamilton Pl., Boston, Mass.
1869. Bloss, J. P., M.D., Troy, N. Y.
1865. Boericke, F. E., M.D., 635 Arch St., Philadelphia, Pa.
1874. Bond, Mary E., M.D., 122 Lexington Av., New York.
1866. Borland, W. C., M.D., Pittsburg, Pa.
1875. Bosley, S. Clement, M.D., Connelsville, Pa.
1872. Bossert, Charles, M.D., 2295 Second Av., New York.
1870. Botsford, Alva H., M.D., Grand Rapids, Mich.
1869. Bowen, G. W., M D., Fort Wayne, Ind.
1871. Bowie, Alonzo P., M.D., Uniontown, Pa.
1869. Bowman, Benjamin, M.D., Chambersburg, Pa.
1875. Bowman, John R., M.D., Cheyenne, Wyoming.
1866. Boyce, C. William, M.D., Auburn, N. Y.

1870. Boyer, Francis W., M.D., Pottsville, Pa.
1874. Boynton, Frank H., M.D., 151 Lexington Av., New York.
1860. Bradford, F. Standish, M.D., 55 W. 34th St., New York.
1871. Bradford, Herbert C., M.D., Lewiston, Me.
1869. Bradford, Thomas L., M.D., 1915 Memphis St., Philadelphia.
1877. Branstrupp, William T., M.D., Vincennes, Ind.
1865. Bradford, T. C., M.D., 170 W. Fourth St., Cincinnati, O.
1874. Bradner, Fred. H., M.D., Middletown, N. Y.
1869. Breyfogle, Charles W., M.D., San José, Cal.
1873. Breyfogle, W. L., M.D., Louisville, Ky.
1875. Breyfogle, Edwin S., M.D., San José, Cal.
1869. Brick, Francis, M.D., Worcester, Mass.
1869. Briry, Milton S., M.D., Bath, Me.
1876. Bronson, Benjamin F., M.D., Bridgeport, Conn.
1859. Brooks, Charles A., M.D., Clinton, Mass.
1872. Brooks, Charles G., M.D., East Boston, Mass.
1876. Brown, Asa W., M.D., Providence, R. I.
1867. Brown, Edward V., M.D., Tarrytown, N. Y.
1869. Brown, Granville Curtis, M.D., 28 East 22d Street, New York.
1867. Brown Henry R., M.D., Leominster, Mass.
1867. Brown, Titus L., M.D., 45 Collier St., Binghamton, N. Y.
1872. Brown, Samuel, M.D., 651 N. 10th St., Philadelphia.
1876. Bruns, Frederick, M.D., 96 Lexington St., East Boston, Mass.
1867. Bryant, Melville, M.D., 374 Adelphi Street, Brooklyn, N. Y.
1869. Buck, J. D., M D., 305 Race Street, Cincinnati, O.
1868. Budlong, John C., M.D., Centredale, R. I.
1873. Buffum, J. H., M.D , 201 E. 23d St., N. Y.
1867. Bunting, Thomas C., M.D., East Mauch Chunk, Pa.
1878. Burck, Frank T., M.D., Frederick, Md.
1867. Burdick, Stephen P., M.D., 351 W. 34th St., New York.
1854. Burgher, J. C., M.D., 332 Penn Av., Pittsburg, Pa.
1869. Burr, Charles H., M.D., Portland, Me.
1870. Bushnell, Lafayette, M.D , 204 E. 39th St., New York.
1875. Butler, Clarence W., M.D., Mont Clair, N. J.
1873. Butler, W. M., M.D., Middletown, N. Y.
1877. Butler, John, M.D., 32 W. 24th St., New York.
1871. Cadmus, James M., M.D., Waverly, N. Y.

1868. Calvert, William J., M.D., Jackson, Mich.
1867. Campbell, C. E., M.D., 314 E. 18th St., New York.
1874. Campbell, Merrett B., M.D., Joliet, Ill.
1876. Campbell, James A., M.D., 1731 Morgan Street, St. Louis, Mo.
1873. Canfield, Corresta T., M.D., Titusville, Pa.
1875. Carleton, Edmund, Jr., M.D., 58 W. 9th St., New York.
1874. Carmichael, James A., M.D., 41 W. 36th St., N. Y.
1869. Carpenter, Charles H., M.D., 1 Fifth St., Troy, N. Y.
1873. Caruthers, R. E., M.D., Downingtown, Pa.
1854. Cate, Shadrach M , M.D., Salem, Mass.
1876. Cate, William, M.D., Salem, Mass.
1859. Chamberlain, William B., M D., Worcester, Mass.
1873. Chantler, I. B., M.D., Sewickley, Pa.
1875. Chapman, Millie J., M.D., 216 Penn Av., Pittsburg, Pa.
1871. Chase, Maurice J., M.D., Galesburg, Ill.
1873. Chase, Sara B., M.D., 56 W. 33d St., New York.
1876. Chase, Herbert A., M.D., Cambridge, Mass.
1870. Cheney, Benjamin H., M.D., 189 Church Street, New Haven, Conn.
1871. Child, Nelson N., M.D., Ogdensburg, N. Y.
1875. Childs, Orrin D., M.D., Akron, O.
1865. Childs, W. R , M.D., 306 Penn Av., Pittsburg, Pa.
1870. Chittenden, George W., M.D., Janesville, Wis.
1871. Clapp, Herbert C., M.D., 544 Tremont Street, Boston, Mass.
1854. Clarke, Henry B., M.D., New Bedford, Mass.
1859. Clarke, John L., M.D., Fall River, Mass.
1869. Coburn, Edward S., M.D., 91 Fourth St., Troy, N. Y.
1869. Cochran, Charles A., M.D., Winthrop, Me.
1865. Cofreen, J. Q. A., M.D., Dayton, O.
1866. Cogswell, C. H., M.D., Clinton, Iowa.
1870. Colburn, S. H., M.D., Athol, Mass.
1874. Colton, Henry E., M.D., Buffalo, N. Y.
1869. Compton, J. Augustine, M.D., Indianapolis, Ind.
1874. Conant, Clarence M., M.D., Middletown, N. Y.
1876. Conant, Thomas, M.D., Gloucester, Mass.
1875. Connor, Delania T., M.D., New Haven, Conn.
1869. Cook, Charles P., M.D., Hudson, N Y.
1867. Cook, E. G., M.D., 103 State Street, Chicago, Ill.
1866. Cook, William H., M.D., Carlisle, Pa.
1854. Cooke, N. F., M.D., 58 State St., Chicago, Ill.
1874. Coon, Henry C., M.D., Alfred Centre, N. Y.
1866. Cooper, J. F., M.D., Alleghany, Pa.

1876. Cooper, Clark J., M.D., Camden, N. J.
1876. Couch, Louis B., M.D , Nyack, N. Y.
1877. Couch, Asa S., M.D., Fredonia, N. Y.
1874. Corbin, John L., M.D., Athens, Pa.
1869. Corcoran, Luke, M.D., Springfield, Mass.
1873. Cossaart, A. B., M.D., 1421 Lexington Av., N. Y.
1869. Covert, Nelson B., M.D , Geneva, N. Y.
1871. Covert, Rynear B., M.D., Seneca Falls, N. Y.
1865. Cowley, David, M.D., Station A., Pittsburg, Pa.
1875. Cowperthwaite, Albert C., M.D., Nebraska City, Neb.
1854. Cox, James W., M.D., Albany, N. Y.
1869. Cragin, F. M., M.D., Norwood, Mass.
1878. Cranch, Edward, M.D., Erie, Pa.
1874. Crank, C. D., M.D., Cincinnati, Ohio.
1872. Crater, Henry, M.D., Somerville, N. J.
1875. Crawford, John S., M.D , Pittsburg, Pa.
1869. Crispell, G. D., M.D., Kingston, N. Y.
1876. Crocket, Frederick E., M.D., West Newton, Mass.
1876. Crosby, Obed H , M.D., Atlantic City, N. J.
1869. Cross, Hiram B., M.D., Jamaica Plain, Mass.
1875. Cross, Lester E , M.D., Stockton, Cal.
1869. Cross, William P., M.D., 476 Broadway, South Boston, Mass.
1859. Cullis, Charles, M.D., 16 Somerset St , Boston, Mass.
1867. Currier, C. B , M.D , 972 Lexington Av., N. Y.
1876. Curtis, John M., M.D., Wilmington, Del.
1874. Curtis, R. J., M.D., Mayville, N. Y.
1867. Cushing, Alvan M., M.D , Lynn, Mass.
1878. Cushing, Chas. F., M.D., Elyria, O.
1869. Cutler, William C., M.D., Chelsea, Mass.
1866. Dake, B. F., M.D., Pittsburg, Pa.
1877. Dake, Walter M., M.D., Jackson, Tenn.
1872. Dake, William C , M D., Nashville, Tenn.
1870. Danforth, Willis, M.D , 1224 Wabash Av., Chicago, Ill.
1874. Darling, Henry H., M.D., Keene, N. H.
1875. Dart, George, M.D., Depeyster, N. Y.
1871. Davis, W. Beesely, M D., 323 Richmond St., Philadelphia.
1875. Davis, Fielding L., M.D., Evansville, Ind.
1878. Davis, John E. L., M.D., Nyack. N. Y.
1868. Dayfoot, Herbert M., M.D , Mount Morris, N. Y.
1869. De Derkey, F. F., M.D., Mobile, Ala.
1874. Delamater, N. B , M.D , 65 22d St., Chicago, Ill.
1869. Dennis, L., M.D., Newark, N. J.
1875. Deschere, Martin, M.D , New York.

1858. Detwiler, J. J., M.D., Easton, Pa.
1878. Dinsmore, Samuel W. S., M.D., Sharpsburg, Pa.
1876. Dixon, George M., M.D., Sacramento, Cal.
1875. Dodge, Rodolph L., M.D., Portland, Me
1868. Doran, Charles R., M.D, Jacksonville, Florida.
1869. Dorion, Charles N., M D., 526 Wabash Av., Chicago, Ill.
1872. Doughty, Francis E., M.D., 146 W. 33d St., N. Y.
1867. Dowling, John W., M.D., 313 Madison Av., N.Y.
1875. Doolittle, Egbert D., M.D., New Brunswick, N. J.
1875. Drake, Harlow B., M.D., Detroit, Mich.
1871. Drake, Jason W., M.D., Dover, N. H.
1871. Drake, Olin M., M.D., Ellsworth, Me.
1871. Dreher, Charles B., M.D., Tamaqua, Pa.
1869. Dudley, Pemberton, M.D., S. W. cor. 15th and Master Sts, Philadelphia.
1866. Duncan, T. Cation, M.D., 287 W. Randolph St., Chicago.
1874. Dunn, J. L., M D., Titusville, Pa.
1866. Earhart, J. R, M.D., 1839 Arch St., Philadelphia.
1877. Eastman, Frank, M.D., Atlanta, Ga.
1859. Eaton, Hosea B., M.D., Rockport, Me.
1877. Eaton, J. Albro, M.D., 67 Putnam Av., Brooklyn, New York.
1876. Eckel, John N., M.D., 325 Geary St., San Francisco, Cal.
1874. Edmonds, Wm. A., M.D., 2924 Washington Av., St. Louis, Mo.
1871. Edmundson, Walter F., M.D., 375 Fifth Av., Pittsburg, Pa.
1872. Edson, Susan A., M.D., 1308 I St., N. W., Washington, D. C.
1868. Eggert, William, M.D., Indianapolis, Ind.
1873. Eldridge, C. S., M.D, 765 Michigan Av., Chicago, Ill.
1869. Elliott, Joseph B., M.D., 493 Clinton Av., Brooklyn, N. Y.
1876. Elliott, Levi W., M.D., Stockton, Cal.
1876. Enloe, Thos. E., M.D., Nashville, Tenn.
1873. Ensign, Jennie, M.D., 357 W. 34th St., New York.
1867. Ermentraut, John P., M.D., 76 2d Av., New York.
1874. Evans, Albert J., M.D., Lockport, N. Y.
1872. Everett, Mary H., M.D., 433 W. 34th St., New York.
1875. Everett, Ambrose S., M.D, St. Louis, Mo.
1871. Fager, Charles B., M.D., Harrisburg, Pa.
1867. Fanning, Thomas C., M.D., Tarrytown, N. Y.
1859. Farnsworth, Charles H., M.D., E Cambridge, Mass.
1872. Farrington, E. A., M.D., 1736 Green St., Philadelphia.

1876. Fellger, Adolphus, M.D., 154 N. 11th St., Philadelphia.
1871. Fetterhoff, Hiram R., M.D., 77 George St., Baltimore, Md.
1868. Finch, Edward W., M.D., New Rochelle, N. Y.
1855. Fincke, Bernhardt, M.D., 122 Livingston St., Brooklyn, N. Y.
1875. Finley, R. S., M.D., Xenia, O.
1873. Fisher, A. Le Roy, M.D., Elkhart, Ind.
1867. Fiske, William M. I., M.D., 101 Division Avenue, Brooklyn, N. Y.
1867. Flagg, Levi W., M.D., Yonkers, N. Y.
1869. Flanders, David P., M.D., Belfast, Me.
1870. Flowers, J. R., M.D., Columbus, O.
1875. Ford, Julia, M.D., Milwaukee, Wis.
1875. Fraser, Edward J., M.D., 221 Powell St., San Francisco, Cal.
1875. Fleming, W. L., M.D., 316 W. 23d St., New York.
1874. Forbes, Geo. F., M.D., West Brookfield, Mass.
1867. Foster, Wm. D., M.D., Hannibal, Mo.
1869. Fowler, Edward P., M.D., 10 E 41st St., New York.
1867. Franklin, E. C., M.D., 1402 Olive St, St. Louis, Mo.
1874. Frantz, Albert J., M.D., Geneva, N. Y.
1875. Frantz, F. F., M.D., Lancaster, Pa.
1873. Frazier, Jerome B., M.D., Conneautville, Pa.
1858. Freeman, W., M.D., 39 W. 36th St., New York.
1860. Freeman, Wm. E., M.D., Wilmington, N. C.
1858. Freligh, Martin, M.D., 31 W. 24th St., New York.
1875. French, Hayes C., M.D., Cleveland, O.
1871. French, Harriet S., M.D., 337 N. 11th St., Philadelphia.
1866. Friese, Michael, M.D., Harrisburg, Pa.
1872. Frye, Moses M., M.D., Auburn, N. Y.
1858. Fullgraff, Otto, M.D., 53 Irving Place, New York.
1874. Fulton, Henry W., M.D., Pittsburg, Pa.
1859. Gale, Stephen M., M.D., Newburyport, Mass.
1868. Gallinger, Jacob H., M.D., Concord, N. H.
1865. Garside, W. R., M.D., 372 Adelphi St., Brooklyn, New York.
1871. Garbereich, E. W., M.D., Mechanicsburg, Pa.
1869. Gardiner, M. M., M.D., Utica, N. Y.
1869. Gause, Owen B., M.D., 1519 Arch St., Philadelphia.
1873. Gaylord, E. P., M.D., Toledo, O.
1877. Geppert, James P., M.D., 80 W. 9th St., Cincinnati, O.
1859. Gersdorff, E. B. de, M.D., 138 Boylston St., Boston, Mass.

1878. Getze, Geo. M., M.D., Tarentum, Pa.
1869. Gifford, Gilbert L., M.D., Hamilton, N. Y.
1872. Gilchrist, J. G., M.D., Detroit, Mich.
1870. Gordon, George A., M.D., Sandusky, O.
1876. Gordon, Peter A., M.D., Flemingsburg, Ky.
1870. Gottschalk, Wm. von, M.D., 243 Westminster St., Providence, R. I.
1869. Gramm, Gustavus E., M.D., 1656 Vienna St., Philad'a.
1869. Graves, S. P., M.D., Saco, Me.
1871. Greenleaf, John T., M.D., Owego, N. Y.
1874. Gregory, Edward P., M.D., Milford, Conn.
1876. Griffin, John F., M.D., Williamsport, Pa.
1869. Griffith, J. J., M.D., 173 Green Lane, Manayunk, Philadelphia.
1872. Griswold, W. N., M.D., 203 Powell St., San Francisco, Cal.
1877. Griveaud, E. A., M.D., 1400 Olive St., St. Louis, Mo.
1869. Groot, S. I., M.D., 724 New York Ave., Washington, D. C.
1872. Gross, Maria M., M.D., Palmer House, Chicago, Ill.
1874. Grosvenor, Lemuel C., M.D., 185 Lincoln Ave., Chicago, Ill.
1876. Guernsey, Wm. Jefferson, M.D., 4431 Frankford Ave., Philadelphia.
1874. Guernsey, W. N., M.D., 59 W. 36th St, New York.
1875. Guernsey, Joseph C., M.D., 1439 Walnut St., Phila.
1867. Gumpert, B. B., M.D., 840 Franklin St., Philadelphia.
1870. Gwynn, Wm. M., M.D, Throopsville, N. Y.
1872. Haines, James W., M.D, Waynesville, O.
1865. Hale, Edwin M., M.D., 65 22d St., Chicago, Ill.
1860. Hall, Geo. A., M.D., 972 Wabash Ave, Chicago. Ill.
1869. Hall, John, M.D., 33 Richmond St., Toronto, Ontario.
1873. Hall, E. M., M.D., Fredericktown, O.
1873. Hall, John B., M.D., Toronto, Ontario.
1874. Hall, Robert, M.D., Providence, R. I.
1874. Hamisfar, Chas. W., M.D., St. Mary's, O.
1871. Hammond, Albert, M.D., Hagerstown, Md.
1875. Hart, Clement L., M.D., Sioux City, Iowa.
1878. Hastings, Caroline E., M.D., Boston. Mass.
1865. Haynes, J. R., M.D., Indianapolis, Ind.
1857. Harris, Charles Taylor, M.D., Ypsilanti, Mich.
1875. Hasbrouck, Everett, M.D., 253 13th St, Brooklyn, New York.
1857. Hatch, Philo L., M.D., Minneapolis, Minn.
1867. Harding, Evan B., M.D., Northampton, Mass.

1876. Harpel, Edward N., M.D., Shenandoah, Pa.
1869. Hawley, William A., M.D., Syracuse, N. Y.
1874. Hayward, Abner, M.D., Mt. Clemens, Mich.
1869. Hayward, Joseph W., M.D., Taunton, Mass.
1873. Hayward, Milton P., M.D., Oberlin, O.
1869. Hedges, S. P., M.D., 414 Centre St., Chicago, Ill.
1875. Hedges, William L., M.D., Warrensburg, Mo.
1867. Hemenway, Horace P., M.D., E. Somerville, Mass.
1874. Heron, Charles D., M.D., Pittsburg, Pa.
1867. Heurtley, R. Walter, M.D., 277 Franklin Av., Brooklyn, N. Y.
1871. Higbee, Albert E., M.D., St. Paul, Minn.
1871. Higbee, Chester G., M.D., St. Paul, Minn.
1867. Hill, Robert L., M.D., Dubuque, Iowa.
1870. Hills, Alfred K., M.D., 33 W. 23d St., New York.
1875. Hills, Arthur T., M.D., 111 W. 40th St., New York.
1869. Hiller, Frederick, M.D., 226 Post St., San Francisco, Cal.
1873. Hiller, Frederick, Jr., M.D., San Francisco, Cal.
1876. Hindman, David R., M.D., Marion, Iowa.
1867. Hinds, W. H. W., M.D., Milford, N. H.
1867. Hinks, E. F., M.D., Marlborough, Mass.
1873. Hitchcock, Dexter, M.D., Norwalk, Conn.
1876. Hoag, Sanford, M.D., Canton, N.Y.
1859. Hobson, Joseph V., M.D., Richmond, Va.
1876. Hobart, Henry M., M.D., 414 Centre St., Chicago, Ill.
1867. Hocking, William F., M.D., Newcastle, Pa.
1869. Hoffendahl, H. L. H., M.D., 25 Somerset St., Boston, Mass.
1854. Hoffman, H. H., M.D., 260 Penn Av., Pittsburg, Pa.
1860. Holcombe, William H., M.D., 288 St. Charles St., New Orleans, La.
1874. Hollet, Arthur P., M.D., Havana, N. Y.
1869. Holt, Edward B., M.D., Brookline, Mass.
1876. Hoppens, Henry S., M.D., Geneseo, Ill.
1867. Hornby, John, M.D., Poughkeepsie, N. Y.
1858. Hotchkiss, Jesse T., M.D., Cornwall, Orange Co., N. Y.
1859. Houghton, H. A., M.D., 193 Main St., Boston.
1867. Houghton, Henry C., M.D., 44 W. 35th St., New York.
1875. House, Robert B., M.D., Tecumseh, Mich.
1870. Hoxsie, Augustus C., M.D., Buffalo, N. Y.
1867. Hoyne, Temple S., M.D., 817 Wabash Av., Chicago.
1869. Humphrey, Otis M., M.D., Minneapolis, Minn.
1869. Hoyt, William Henry, M.D., Syracuse, N. Y.

1869. Huebener, O. T., M.D., Litiz, Pa.
1870. Huebenger, John A., M.D., Wyoming, O.
1867. Hunt, Henry F., M.D., 315 Market St., Camden, New Jersey.
1873. Hunt, J. B., M.D., Delaware, O.
1874. Hunt, Dwight B., M.D., 50 W. 29th St., New York.
1873. Hurd, Edwin H., M.D., Rochester, N. Y.
1871. Hunting, Nelson, M.D., Albany, N. Y.
1872. Hutchins, H. S., M.D., Batavia, N. Y.
1867. Ingalls, Frederic W., M.D., Kingston, N. Y.
1876. Jackson, Edward R., M.D., Dubuque, Iowa.
1878. Jackson, Wm. H. H., M.D., Oil City, Pa.
1878. Jackson, W. L., M.D., 84 Dudley St., Boston, Mass.
1878. Janney, Francis G., M.D., Columbus, O.
1859. James, Bushrod W., M.D., N.E. corner 18th and Green Sts., Philadelphia.
1866. James, J. E., M.D., N. W. corner 10th and Green Sts., Philadelphia.
1867. Jayne, De Witt C., M.D., Florida, N. Y.
1859. Jefferds, George P., M.D., Bangor, Me.
1875. Jenks, George Henry, M.D., 7 O'Farrell St., San Francisco, Cal.
1873. Jenney, William H., M.D., Kansas City, Mo.
1869. Jernegan, H. Mayhew, M.D., 133 W. Newton St., Boston, Mass.
1876. Johnson, Geo. H. T., M.D., Atchinson, Kan.
1876. Johnson, Maria N., M.D., Philadelphia, Pa.
1860. Johnson, Isaac D., M.D., Kennett Square, Pa.
1870. Johnson, R. B., M.D., Ravenna, O.
1854. Jones, Elijah U., M.D., Taunton, Mass.
1875. Jones, Leonidas M., M.D., Brooklyn, Mich.
1867. Jones, Henry C., M.D., Mount Vernon, N. Y.
1858. Jones, Joseph E., M.D., West Chester, Pa.
1868. Jones, S. A., M.D., Ann Arbor, Mich.
1867. Jones, William A., M.D., Wilton, N. H.
1873. Jones, Gaius J., M.D., Cleveland, O.
1874. Jones, Charles E., M.D., Albany, N. Y.
1876. Kanouse, Abijah W., M.D., Lancaster, Wis.
1871. Karsner, Charles, M.D., 4845 Germantown Av., Philada.
1867. Keep, J. Lester, M.D., 460 Clinton Av., Brooklyn, N. Y.
1874. Keep, Caroline J. Yeomans, M.D., 469 Vanderbilt Av., Brooklyn, N. Y.
1869. Keith, Theo. S., M.D., Newton, Mass.

1858. Kellogg, Edwin M., M.D., New York.
1874. Kenyon, William B., M.D., Buffalo, N. Y.
1874. Kern, William H., M.D., McKeesport, Pa.
1870. King, E. H., M.D., Clinton, Iowa.
1869. Kinne, Theodore Y., M.D., Paterson, N. J.
1876. Kinne, Porter S., M.D., Paterson, N. J.
1870. Kippax, John R., M.D., Maywood, Ill.
1869. Kittinger, Leonard, M.D., Wilmington, Del.
1875. Klein, John W., M.D., 207 3d St., Louisville, Ky.
1874. Knapp, Theodore P., M.D., Union, N. Y.
1871. Kneass, Nicholas W., M.D., Baltimore, Md.
1871. Knerr, Calvin B., M.D., 112 N. 12th St. Philadelphia.
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TO THE

THIRTY-FIRST SESSION

OF THE

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V.

MICROSCOPIC EXAMINATION OF TRITURATED METALS AND OTHER HARD INSOLUBLE SUBSTANCES.

BY C. WESSELHŒFT, M.D., BOSTON.

In the following pages I propose to discuss a subject which has never yet been fully examined. The hypothetically infinite divisibility of matter, and the actual behavior of certain substances under the methods of comminution in use, though widely different when properly examined, have hitherto been regarded as identical; but we should no longer remain in doubt as to the nature of substances in daily use, even if the disclosures we shall have to accept do not harmonize with what we have regarded as true, or with what we would rather believe to be true.

If such disclosures oblige us to set aside a small portion of that which we have hitherto regarded as belonging to our list of medicinal preparations, and if it compels us to set aside a portion of what we have regarded as a pathogenetic record, or if it should henceforth be necessary to regard a portion of our cures as no longer attributable to certain preparations supposed to contain medicinal substances, it will only be for the best advantage of homœopathy and its progress. Such a process of elimination should be initiated fearlessly by ourselves now, and not be left to antagonists, who would, at some remote period, taunt us with errors, and thrust them at us in a less acceptable manner than if we had grappled with the problem ourselves. No one is better fitted for the task of correcting errors in our school than he who is most firmly convinced of its far-reaching truths, and no one can entertain such convictions of the truth of a principle like

homœopathy, and support it successfully, who is not also animated by a conscientious desire to improve upon the technical and practical methods of its application, which may be wrong and faulty, though the general principle be correct, demonstrable and supported by facts. But it is to distinguish *facts* from *spurious*, apparent facts that the following investigation was made. It does not pertain to soluble substances at all, for herein we may as yet claim unbounded liberty; but the subject here treated of relates only to the insoluble substances, which theory teaches us, or our tradition tempts us to accept as soluble substances, when very ample tests disclose quite the contrary.

Hahnemann, describing the method of preparing triturations by grinding certain insoluble substances in a mortar with sugar of milk (*Chron. Dis.*, 2d edit., vol. i), in the course of his essay, asserts that the "changes which are produced in these substances by protracted trituration together with a non-medicinal powder, or by solution with a non-medicinal fluid, is so incredibly great as to border upon the wonderful; and it is a source of satisfaction that the discovery of this wonderful change belongs to homœopathy" (§ 180).

"Not only," continues Hahnemann, "do these substances develop their medicinal power in an immeasurable degree, but they also undergo a change in their physical and chemical behavior; though in their raw state their solubility in water and alcohol could never be perceived, they become entirely soluble in water and alcohol after they have undergone the change under trituration—an invaluable discovery for the art of healing." As examples he has enumerated Sepia, Petroleum, Lycopodium, Marble and Oyster-shells, Baryta, or Magnesia and Silica. The latter, like all the rest, is said to become soluble without residue in water and alcohol, and to exhibit enormous medicinal powers.

Hahnemann applies the same rule, without exception, to metals. "But," says he, "the chemical medicinal substances thus prepared no longer obey chemical laws; they neither undergo chemical changes nor neutralization, all of which is recognized by their effect" (§ 181).

The well-known method of trituration consists in adding a grain of finely-powdered metal (or a drop of insoluble fluid) to

one-third of 100 grains of powdered Sugar of milk in a porcelain mortar. After mixing the substances well, this quantity is triturated for six minutes; then, after triturating it again for six minutes, it is again scraped off for four minutes; the second third of 100 grains of Sugar of milk is added, and the first process of trituration repeated; and so on till the last third has been added and triturated. This results in the first trituration. The second and third triturations are prepared in the same manner. This third trituration is considered as the millionth potency, to which degree insoluble substances *should be brought in order to prepare from them the solutions and necessary potentiations of these solutions.*

"In order to prepare these solutions, and to bring these powdered potencies into a fluid state (and thence to continue their development of power) we are aided by an experience unknown to chemistry: that all medicinal substances, triturated in powder to the millionth potency, become soluble in water and alcohol." Hence it has been the custom to prepare solutions with water and alcohol from the third trituration, on the strength of the assertion that medicinal substances become soluble by the process of progressive trituration; and, for the same reasons, solutions, repeated twenty-seven times, were supposed still to contain medicinal substances in an attenuated state, whence they are called "potencies," or "developments of force," a term which would be appropriate if the process of attenuation actually took place as a result of trituration.

In modern days the process of dilution, attenuation, or potentiation of insoluble substances, has been carried on much farther than practiced by Hahnemann, whose thirtieth potency is now in many cases exceeded by the hundredth, thousandth and millionth potencies.

Ever since the time of Hahnemann the question of the effect of trituration upon insoluble and hard substances, especially of the insoluble metals, has been studied; and, though doubts have been expressed regarding the possibility of trituration resulting in solubility, the axiom of Hahnemann has been accepted throughout, and the hypothesis of solubility has been adopted in all textbooks and pharmacopœias of our school. J. B. Büchner,

C. S. Gruner, G. Schmid and Hartlaub, B. Hirschel and Von Grauvogl, in their textbooks of homœopathy, adopt the hypothesis of solubility throughout, and without modification.

A number of researches on this subject have been made in order to throw light on the subject; and as these have all rather corroborated than disproved Hahnemann's theory of solubility in consequence of trituration, these have so firmly established it as a fact in the minds of the profession, that a repetition and corroboration, or possible refutation, has not been deemed necessary.

In order to appreciate fully the scope and value of observations hitherto made regarding the effect of trituration, we give below all that is obtainable, and probably all that exists on the subject.

In 1838, Dr. Segin, of Heidelberg,* writes: "Entertaining the conviction that there is no force without matter, and no matter without force, which we are not always able to see, I undertook, five years ago, to examine the first six triturations of Cuprum (obtained with a fine file from a copper plate) with a microscope having the power to magnify seventy-five times (diameter?). In every particle of each trituration in dry form I found the copper particles of blackish-brown color equally distributed through the Sugar of milk. In the seventh trituration I was unable to discover any more copper particles. I attributed this non-appearance to the weakness of the instrument." Later Segin had an opportunity of observing substances with a so-called solar microscope. One-fiftieth grain of Carbon examined in this way showed a great many dark points reflected upon the wall; but having already convinced himself of the presence of medicinal matter in the first six triturations, he was not gratified by the result obtained with the solar microscope, which revealed only outlines, while the other instrument revealed also the color. The solar microscope showed the dark points also in the seventh trituration of copper; but when the water had evaporated, there appeared only crystalline forms. The fourteenth dilution of metallic copper diluted with some water still exhibited dark points, which Segin was inclined to consider as particles of copper,

* Hygea, vol. vii, p. 1.

as pure water and alcohol do not show these dark points. There were no formations of crystals. A particle of Cuprum acet. dissolved in water showed crystals united into fascicles. Ammonium mur. in strong solution, examined with the solar microscope, showed sword-shaped crystals, which type they retained as far as the sixth dilution prepared with water. Although no crystals were found in this solution, a number of semi-translucent globules were formed into rows in such a manner as to allow squares to become recognizable.

These few observations convinced Segin that our preparations still contain medicinal substances in very high dilutions, and that only the imperfection of our instruments prevents their recognition. He was confirmed in his opinion by observing that, with Cuprum met., the crystals were of dendritic form; with Cuprum acet. they were needle-shaped; while, dissolved in water, the Sugar of milk forms little columns.

Much more extended and careful were the researches of Dr. Mayrhofer,* who subjected a number of metals to careful microscopic observation. The article referred to is too long to be given in full; the following sketch will sufficiently indicate the results obtained. The object of his researches was to observe the effect of mechanical comminution, and to see how far matter can be reduced. For this purpose the triturated metals were selected for microscopic observation. To avoid errors, the microscopic appearance of pure Sugar of milk and of Alcohol was first studied, as well as that of distilled water, etc. The triturations were prepared in the proportions of 2.098. Of each one of these Mayrhofer placed a particle in a watch-glass, and dissolved the sugar in distilled water, to render the metal visible with magnifying powers of 120 to 300 diameters. The observations were frequently repeated, and every optical and mechanical precaution was taken.

Metallic platina, precipitated from a solution of aqua regia, and reduced to the first trituration, appeared as a light-gray powder, in which the naked eye could distinguish no metallic particles; but the microscope shows the Platina particles very

* Œsterr. Zeitschr. für Homœop., 1844.

evenly distributed throughout the Sugar of milk; but in the solution in a watch-glass there appear myriads of triturated Platina particles, of which the larger ones sink to the bottom, conglomerated into masses, while the smallest float on the surface, and those of medium size float on the intermediate liquid. The second trituration shows the Platina particles in great numbers, the larger particles are less in number, while the third trituration shows isolated minute particles and granules "floating between being and not being." The granules of Platina appeared crystallized into cubes of angular outline, and only the minutest atoms, which "no longer occupy any space," appear to be spherical in form when magnified three hundred diameters, which Mayrhofer states, in the old form, as magnified 90,000 times, which is the square of diameters, and is little more than an exaggeration of the case. But with the means of illumination at his disposal, Mayrhofer seems to have pursued the "material substratum" of Platina as far as the tenth, and possibly as far as the thirteenth dilution.

Leaf gold was found (as all subsequent observations will show) to be very difficult of trituration. Mayrhofer could distinguish the gold particles with the naked eye in the three triturations. The largest particles measured half a line in length, and the smallest $\frac{1}{40}$th of a line; compared with Platina they were as 1 to 10,000. The cause of this is not the want of divisibility of gold, but in its being in the form of gold-foil, which, guarded by Sugar of milk, escapes the pressure of the pestle. Hence these gold particles appear as crumpled up, but not torn in two. In the second trituration the particles are smaller and less numerous, and in the third these appear only as isolated gold particles in the field. They cease to exist in the fifth dilution, and the smallest still measures $\frac{1}{360}$th of a line in diameter, and appears like a large dot.

Gold precipitated from a solution in aqua regia by Sulphate of iron, appears as a brownish-yellow powder, with metallic lustre when pressed upon a hard surface. Under the microscope it appears as a porous conglomeration of innumerable globules of gold. This preparation is easily triturated, presenting under the microscope myriads of gold particles, distributed evenly

through the Sugar of milk. A tenth of a grain of the first trituration, dissolved in five drops of water, shows the gold conglomerated again into masses by attraction and adhesion of atoms. The same takes place with precipitated Platina, Silver, Copper, Tin, Mercury and Lead.

Considering that only $\frac{1}{500}$th of a grain of gold was in the solution, the number of visible particles is truly astonishing, amounting apparently to thousands under the space of an objective of high power. They appear from the size of a poppy-seed to the size of a mite "*at the border of visibility and invisibility.*" Fixing the eye on a portion of the field, we perceive gold stones, which appear and disappear; which Mayrhofer considers as a proof that the metal is so finely divided that the particles are invisible under a power magnifying 14,400 times (equal to 300 or 400 diameters).

The second trituration affords nearly the same appearances as the first, with the exception that the conglomerated masses are fewer in number, and that the isolated particles of gold appear still smaller; in this, as in the first, minute plates of gold are to be seen. The third trituration exhibits very few conglomerated masses, while the isolated particles prevail, but still appear to differ in regard to their dimensions, a proof that the extreme of their divisibility has not been reached. Mayrhofer calculates that as a grain of the third trituration contains 28,800,000, the two grains would thus be reduced to the number of 3,600,000,000,000,000 of gold monads. This calculation probably approaches the truth very closely, especially as Mayrhofer gives measurements of the particles of the third trituration, which he describes as being $\frac{1}{1000}$th of a line in length and breadth. The fourth trituration of gold, observed under a magnifying power of 300 diameters, appeared to show the division of particles as still progressing, appearing like yellow dots of metallic lustre; there were still some magnified to the size of poppy-seeds, and even some minuter plates. Of the smallest particles, ten could occupy the space of a micrometer, showing them to be about $\frac{1}{1200}$th of a line in diameter, and having distinct molecular motion, which gives them a peculiar twinkling appearance. Mayrhofer asserts to have pursued the presence of these gold

particles as far as the tenth and eleventh dilutions, like those of platina.

Silver foil behaves like gold under the process of trituration, but breaks up rather more easily. The smallest particles can be seen with the naked eye in the first trituration; even in the second the larger particles are thus visible, while those of the third continue to be of variable size. The particles cannot be traced below the fifth dilution. Precipitated silver is affected precisely like precipitated gold. It can be traced as far as the twelfth dilution, and its minutest particles measure $\frac{1}{1000}$th of a line. Mayrhofer does not state the method employed in observing the dilutions microscopically.

Quicksilver in the first trituration shows aggregated globules of variable size, connected apparently by a gauzelike pellicle, which he attributes to incipient oxidization. These globules are much less frequent in the second, and disappear in the third trituration, while *isolated globules* can be traced as far as the tenth dilution.

Iron in the first trituration shows many coarse and some very fine particles; these are somewhat reduced in the second, and still more so in the third, where the smallest appear like minute atoms of $\frac{1}{600}$th of a line in diameter; they could be traced as far as the eighth dilution.

Lead was found to be much more divisible than the harder metals, but no measurements are given; probably, as will be shown, on account of the great tendency of lead to conglomeration of its particles, which Mayrhofer describes as "floating pellicles," a product of oxidization.

Copper rubbed upon a stone under water showed a very singular appearance in the first trituration, in which some spherical particles seemed hollow and perforated, some seemed to have burst open, and appeared to contain a second globule inside, while the smallest particles measure $\frac{1}{400}$th of a line. In the second trituration they are fewer, and in the third the spheres of copper are absent and the minutest particles are not very numerous. *In the form of copper foil* this metal is much more evenly divisible by trituration than by the former method, but it still

exhibits many very coarse particles capable of being magnified to the size of half an inch under the microscope.

Precipitated copper, prepared, according to Gruner, by agitating pure zinc bullets in a hot solution of sulphate of copper, is microscopically analogous to precipitated gold and silver, consisting of an aggregation of innumerable crumbs and granules. The first trituration appears as a gray powder, and a solution of the same exhibits the particles of copper rolled together like slags or clinkers, or separated into myriads of isolated particles, covering the bottom (of the watch-glass?), and very numerously suspended in the intermediate portion of the solution. *The second trituration* shows few conglomerations, but very numerous free particles, which are alone visible in the third trituration. The "material substratum," as Mayrhofer expresses it, may be recognized as far as the twelfth dilution, and the diameter of the smallest particles (copper monads) is $\frac{1}{2000}$th of a line in diameter.

The same observations apply to tin, of which the foil is less easily triturated than the precipitate, which admits of finer comminution than any of the others. It may be traced as far as the fourteenth dilution, and its minutest particles measure $\frac{1}{2000}$th of a line.

Mayrhofer observes (p. 168) that with one of Plœssl's best instruments he could not use higher powers than 300 on account of the diminution of light, owing to which *he could not clearly define* the limit of visibility of metallic atoms. But he is of the opinion that the objectives he was able to use did not render all the atoms visible, and that the stated results of comminution do not reach the reality and the extremes of minuteness. Mayrhofer does not share the opinion that trituration renders the metals soluble, for their minute parts remain visible, though he expresses doubts of that.

He thinks, however, that with each trituration the particles are progressively subdivided, split, or crushed. But he doubts that they undergo further reduction in the process of dilution. He believes it possible that development of electric and magnetic powers may give them efficacy, but that they should not be called solutions, the metal being only held in suspension. Yet he adds

that only solutions without demonstrable particles may be called dynamizations.

The mechanical divisibility of matter is practically limited, though its particles are much smaller than a blood-corpuscle; the minute particle of metal measuring $\frac{1}{2000}$th, the former $\frac{1}{300}$th of a line in diameter. The precipitated metals should be used in the preparation of triturations, as the filings are too coarse. Mayrhofer reached the conclusion that the baser metals undergo oxidization in the process of trituration, and that it were better to use the oxides at the outset, for what he saw under the microscope he considered as the result of oxidization, especially the formation of the pellicle he alludes to. In the following observations, made under different circumstances and conditions, this subject will be shown in another light, so that many of the statements of Mayrhofer and others will have to be modified.

Besides the foregoing, other observations are scattered throughout our periodical literature, most of which tend to show that though the metals are not soluble in a chemical sense, they may at all events be traced far into the dilutions or the fluid potencies. Since the beginning of the homœopathic school and its methods of preparing medicines, Hahnemann's axioms have been held as true, and the observations detailed above have generally corroborated them, or have been construed to do so in our textbooks on pharmacology and practice. Caspar's, Gruner's, Büchner's, and Schwabe's pharmacopœias, all, without modification, accept *the rule that dilutions should be prepared from the third decimal trituration.* Hirschel, in his textbook, repeats it like v. Grauvogl, and both adduce numerous analogies tending to show the probability of progressive reduction of matter under the process of trituration. At all events, it is a foregone conclusion with all authors, as it has been with all physicians, that this is actually the case. Some remained satisfied with the assumed or apparently demonstrated possibility of rendering insoluble substances soluble by trituration, while others held the opinion that matter becomes deprived of its material substratum, while its power or dynamic force, etc., is imparted to the vehicle, and that the higher the process of trituration is carried, so much the finer grows the medicinal substance, and so much the more subtile its

influence. This is all very natural. The assumption of the progressive reduction by trituration is most plausible, for nothing can appear more reasonable than that hard substances should become reduced to extreme fineness by each successive trituration. Those who have examined the subject have corroborated the assumption, but this was nearly forty years ago. As our means of examination by the microscope have improved, it is now time to repeat the observations. In the older researches, only insoluble substances have been considered, and these only are the subject of the present observations, which do not at present apply to soluble substances at all. The latter constitute a subject requiring a separate and different course of examination.

The subject which led to this investigation was vegetable charcoal, of which the writer made a proving and prepared a report on the same, which is contained in the *Transactions of the American Institute of Homœopathy* for 1877. Finding the pathogenetic result far inferior to expectation, and that triturations of coal were nearly inactive, a careful microscopic observation of that substance in its pure state, as well as in trituration, was the result. The observation thus obtained showed plainly that the great coarseness of the particles of coal as it appears in the triturations must have been the chief source of its failure to produce a strict pathogenetic effect. This and other facts led to the subsequent examination of gold, copper, lead, iron, silica, etc.

GENERAL REMARKS ON MICROSCOPIC EXAMINATIONS OF TRITURATIONS.

The great obstacle in the microscopic examination of our triturations is sugar of milk. It is difficult and often impossible to get rid of it, and hence it obscures, or at least disturbs, every preparation and eludes every precaution. Difficult to dissolve in water and easy to recrystallize, its countless minute crystals appear everywhere. The only way to overcome this obstacle is to know it thoroughly, so as to be always able to distinguish it from the substances we wish to see without it; it is only practice and patience that will enable an observer to make this distinction without difficulty. Neither Mayrhofer nor

Segin laid the stress on this subject it deserves, and it has effectually obscured many of their observations.

When we wish to examine heavy metals which sink to the bottom of liquids, like gold, lead, and copper, the sugar of milk can be got rid of by washing the trituration in a watch-glass; by dissolving a grain of a trituration, and warming it till the liquid is clear, the metal will be found at the bottom, and the liquid can be drawn off with a pipette. This process should be repeated twenty-five or thirty times, notwithstanding which many crystals may appear in the metallic sediment, and some of its minutest particles are sacrificed in the process.

In the examination of light substances, like charcoal, this wasting process is useless, and the best means of seeing them distinctly is to place a small particle of the trituration upon a slide, adding a drop of distilled water, and cautiously warming it over a spirit-lamp till it is perfectly clear, and then *slowly drying it.* This slow process of drying has the effect of changing the sugar of milk into a clear varnish-like coating upon the slide, which, for a length of time, shows no crystals, and permits a clear view of all opaque particles imbedded in it; it may last for several days, but at length it crystallizes into white opaque tufts or fascicles. Under favorable circumstances these crystals leave perfectly clear permanent spaces between them, which permit a perfect view of these opaque metals, etc.

Another very useful manner of observing opaque objects is by means of common white filtering-paper. This under the microscope shows only perfectly white or transparent textile fibres interwoven with each other, and transmitting a good light. Particles of metal or coal, etc., however small, when caught in the meshes of the filter, will be seen very well, particularly as we thus get rid of the sugar of milk entirely. For the purpose of transmitting more light, a small piece of this paper, holding the metal to be examined, may be laid upon a slide and mounted in balsam, which renders the paper transparent and the opaque particles visible.

Canada balsam is indispensable in these examinations. If we have upon a slide a crystallized mass of sugar of milk obscuring the particles of metal to be examined, a drop of balsam spread

upon it, and covered with a glass cover, renders the otherwise opaque crystals of sugar of milk transparent, and removes their glittering appearance, thus exhibiting clearly the glistening metal, and preventing mistakes. Balsam is, however, particularly useful in preventing the conglomeration of particles, which proves so troublesome when triturations are dissolved in water. To use balsam effectually, it is necessary to obtain the substances to be examined in a pure state, as in the form of precipitate or powder, without admixture of sugar of milk, or by washing them as described. Place a minute particle of the pure substance upon a slide, adding a drop of balsam, and rub and spread it out with the rounded end of a glass rod; then press on a thin glass cover and examine. It will then show the particles of the substance to be examined separated from each other, and perfectly bright and distinct. Oil and glycerin answer very well for temporary preparations.

The use of the microscope relating to this particular subject needs no radical modifications of methods long in use; no very high powers are necessary. A magnifying power of 100 diameters will bring to view the minutest opaque particles we are able to produce, and higher powers, except for the purpose of measurement, are seldom requisite. Under favorable management of light and mounting there are few substances reduced to extreme fineness by the methods at present in use, which cannot be seen with a magnifying power of from forty to fifty diameters. This may seem strange in view of the traditional idea prevalent among us of the extreme or spirit-like refinement of matter attained by trituration; still moderate magnifying powers will be found to answer all purposes. Experienced microscopists know the superior value of moderate magnifying powers for transparent objects. This superiority applies with still greater force to opaque objects, of which it is practically possible to see clearly minuter objects by means of direct light than would become visible by transmitted light, which by deflection, or rather inflection, brings an image to a focus before it reaches an objective of great angle of aperture, and shows an indistinct image, which direct light, permitting parallel rays to enter, reveals the minutest opaque object, which vanishes from sight as soon as light is admitted from be-

low. Hence it is possible to see the smallest particles of opaque substances which it is possible to produce, at least by the method of trituration hitherto employed.

Any good microscope, accompanied by a double-convex condensing lens, will do, when dexterity has been obtained in the preparation of triturations for microscopic examinations. But nothing answers this purpose so well as the illuminator invented and first described by Professor Abbe, of Jena,* which admits of the examination of opaque substances by means of direct light under a magnifying power of about seven hundred diameters ($\frac{1}{9}$th inch objective, eye-piece No. 4). By means of this beautiful instrument we are enabled to decide whether lower magnifying powers fail to reveal any particles of matter to our sight. The following observations will show how far we may expect to succeed in this.

Though our microscopes may possess all the modern improvements, these will be useless unless the proper means are employed in preparing and mounting triturations of metals and other substances; and there is no doubt that with proper management of the microscopes made in the first quarter of this century, observers might have known what it is possible to know now concerning the divisibility of matter by trituration.

EXAMINATION OF TRITURATIONS.

The questions to be determined are:

Does each successive trituration reduce hard insoluble substances to a greater degree of fineness, in proportion to the vehicle employed, and the length of time involved in the process of trituration?

Are they rendered soluble by trituration, and can they be traced in solutions and dilutions made from the third trituration?

Can they produce pathogenetic and curative effects in the state of fineness we are able to reach?

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* See M. Schulze's Archiv. für Microscop. Anatomie, vol. ix, p. 46. It forms a part of all microscopes made by M. C. Zeiss, in Jena, and is also attached to instruments of the Bausch and Lowb Optical Company.

Carbo vegetabilis is the substance which first gave the impulse to this investigation. Careful microscopic tests of its triturations revealed conditions which explain to a great extent the negative results obtained by provings.

The *first centesimal trituration* of Carbo, prepared under my immediate supervision, was examined by dissolving a little of it upon a slide, by adding a drop of distilled water and warming it over a spirit-lamp. The substance was examined under a thin glass cover while in solution, as well as dried, till it reached its transparent state, as also when mounted in balsam. When exposed to direct light, coal at first appears white, which is owing to the glistening of its particles, and the light reflected from their sharply fractured surfaces; on turning the light up from below, each particle at once shows its outline in perfect blackness. A very high power is unnecessary, as every particle can be seen when magnified from fifty to a hundred diameters, as will be readily appreciated when the trial is made by measurement, the largest particles having a length and breadth of $\frac{1}{40}$th mm., and the smallest $\frac{1}{1000}$th mm. to $\frac{1}{1200}$th mm.

The *second centesimal trituration*, treated in the same way, exhibited a much smaller number of particles, but still sufficient to observe them well, as every particle could be seen with perfect distinctness, and measured with ease. Repeated and careful measurements proved that the particles of the second trituration do not vary very perceptibly in size from those of the first, the largest being about $\frac{3}{200}$ths mm., while the smallest particles had dimensions of not less than $\frac{1}{1200}$th mm. To insure certainty, a drachm of the second trituration was dissolved in distilled water, and filtered through white filtering-paper, upon which, after drying it, the particles of coal could be very distinctly seen, as they were all retained in the meshes of the filter, together with the yellow coloring matter of the sugar of milk and other impurities, from which the fragments of coal may be distinguished by their sharp edges and glistening surfaces.

The *third centesimal trituration* offered some more obstacles. A great many specimens had to be examined before a single particle of coal could be found, besides the carbonaceous impurities of the sugar of milk, which appears in rounded lustreless

masses. After many unsuccessful attempts and trials, it was found that by careful and patient search the third trituration exhibits particles (perhaps only one or two in the field) of coal, which could be recognized as such, without doubt, by their sharp edges and glistening surfaces, imbedded in crystals of sugar of milk, which, by their transparency and whiteness, render the particles of coal quite distinct. Measured in the usual manner, the dimensions of the largest particles were $\frac{1}{600}$th mm., those of the smallest not less than $\frac{3}{2000}$ths mm. to $\frac{1}{1200}$th mm.

To test the subject still further, a drachm or so of pure charcoal was triturated by itself for three-quarters of an hour; a needlepointful of the fine powder was then placed on a slide, a drop of balsam added, and rubbed with a glass rod until the whole was intimately mixed and spread out, thus separating and preventing coalescence of the minutest particles. The largest particle of this preparation measured $\frac{1}{150}$th mm., the smallest one less than $\frac{1}{1800}$th mm. to $\frac{1}{2000}$th mm. Compared with the particles of the first trituration, the largest of the latter were nearly five times larger than those of pure coal, while the smallest particles of the trituration with the sugar of milk were almost twice as large as those of pure coal. This is a revelation which can easily be substantiated by any observer who will take the trouble.

In order to see if protracted trituration would reduce the particles still farther, when combined with sugar of milk, a quantity of Carbo, with an equal quantity of sugar of milk, was triturated for thirty consecutive hours by a triturating machine. A sample of this, kindly furnished me by Dr. T. F. Allen, was subjected to measurement. It exhibited a majority of particles measuring no less than $\frac{1}{25}$th mm., and also numerous particles of a diameter of $\frac{3}{2000}$ths mm., or about $\frac{1}{700}$th mm., the largest being irregular jagged fragments of coal, while the fraction expressing the dimensions of the smaller fragments seems to indicate the limit of minuteness which it is possible to reach by this method of comminution.

The subject of preparing dilutions from triturations will be considered below, as also the mechanical influence of sugar of milk in the process of trituration. Before doing so, it will be

well to consider several other substances in regard to the process of trituration.

Charcoal having given the impulse to a series of examinations which produced unexpected results, the next substance of interest appeared to be *metallic gold.* Much of what Mayrhofer said of this metal is perfectly true, especially his observations on leaf-gold. It is very difficult to triturate, and with our present method it is impossible to reduce it to a great degree of fineness, as will be proved. The question to be determined is, whether the triturations of leaf-gold, according to Hahnemann's method, reduce that metal to a state so fine as to permit the assumption of solubility in the third trituration? The first centesimal trituration when examined with the naked eye appears slightly yellow. A particle spread upon a slide, and pressed out flat with a glass cover, shows not very numerous particles of gold. They are mostly hidden by the adherent sugar of milk, quite contrary to expectation, and to the description of others. This same observation applies to all metals I have examined. As a matter of course, direct light is necessary; a good white daylight suffices, especially when concentrated upon the object by a condensing lens. The absence of numerous visible particles in the powder of a trituration might lead us to suppose that the metal had actually been reduced to invisible fineness, which is easily determined by dissolving a little of the trituration upon a slide, when the particles of leaf-gold come to light most brilliantly, just as described by Mayrhofer. They are very irregular in size as well as in shape. He describes them as rolled off or drawn into threads. I found them mostly flat, and attribute their rolled-off appearance to the imperfect defining power of the objectives then in use. Instruments of to-day allow the image to be seen in a plane surface. Another good way to examine gold, is to dissolve a portion of the trituration in a drachm vial, when particles of gold will be seen floating on the top of the liquid. They can be easily lifted out by a needle, and placed on a slide nearly free from sugar of milk. This will succeed with the first centesimal trituration, and generally with the second, but not with the third. The smallest particles thus obtained can easily be seen with a

magnifying power of fifty diameters; with a little experience, twenty-five diameters answers the purpose very well.

After searching most carefully many samples of the third trituration, it was at length possible to discover here and there a particle of gold in the solution dried to clearness upon a slide, measuring no less than $\frac{1}{50}$th mm. Thinking it still possible that the gold-leaf might have undergone greater comminution, a series of six triturations were prepared with a larger proportion of gold, in the proportion of 25 to 100, carefully ground for an hour in a large mortar, adding twenty-five grains of sugar of milk every fifteen minutes, after scraping up the mass adhering to the mortar. In this process the additional grains of gold could not prevent their progressive comminution, if this were possible, especially as the coal trituration had proved that the comminution was greater in proportion to the diminution of sugar of milk.

Four or five grains of each of these preparations were dissolved in separate watch-glasses, and, by gentle rotation, a minute deposit of gold settled at the bottom. The superfluous liquid was drawn off with a fine pipette, or a strip of blotting-paper, more water added, warmed, and again drawn off, and this process repeated till the microscope showed no more crystals of sugar of milk. The gold could then be transferred to a slide, mounted in balsam, and examined. The measurements were as follows: The largest particles of the first trituration measured from $\frac{1}{25}$th mm. to $\frac{3}{50}$th mm. in length and breadth, whilst the smallest measured no less than $\frac{1}{400}$th mm.

The other five triturations were subjected to the same examination, many times repeated, not only after having been washed in a watch-glass, but in solution, and in the clear crystallized state of the vehicle, but always with the same result, so that the *sixth trituration of gold-leaf exhibited precisely the same measurements as all the others from* $\frac{1}{25}$th *mm. to* $\frac{1}{400}$th *mm.* Notwithstanding all precautions, some crystals of sugar of milk cannot be got rid of, besides other impurities of the trituration. These, at first, will puzzle an observer, and create doubts as to the possibility of some extremely minute but plainly visible particles being gold. But perseverance and practice will dispel these

doubts, for the metals can be distinguished from crystals of sugar of milk. They are white, of great refractive power, while particles of leaf-gold are always irregular in shape, and of dull yellow metallic lustre with higher powers, of bright-golden lustre with lower powers. The foreign particles of extreme minuteness sometimes measure $\frac{1}{1000}$th mm.; still the strongest evidence of their not being gold is their transparency, which becomes quite apparent by contrast when changing rapidly and repeatedly from transmitted to direct light. The above measurements of particles of gold-leaf indicate fragments of a size often quite visible to the unaided eye. Hence, as far as gold-leaf is concerned, its solubility, in the third trituration, is quite out of the question when the particles of the sixth show no reduction in size, unless it is in regard to the very largest fragments, which may have been somewhat reduced, as shown by the preponderance of medium-sized fragments. In fact, there is no essential change after the first trituration. As in the case of charcoal, the mass of sugar of milk, by its interposition, prevents the pestle from crushing the gold against the mortar.

Precipitate of gold, says Mayrhofer (obtained from a solution of muriate of gold), is much more readily ground up to great fineness. Apparently it offers none of the difficulties of gold-leaf. In its dried state this precipitate is a reddish-brown impalpable powder. Examined with the microscope it consists of innumerable conglomerated masses or minute cumuli, each of which is composed of much smaller particles. They are of reddish metallic lustre, resembling copper more than gold, except when pressed out or rubbed with a knife-blade upon a glass slide, when these particles spread out into scales and films of bright yellow gold, their coppery appearance being attributable to the peculiar refraction of light of the rounded cumuli and conglomerations.

The first centesimal trituration, prepared with the greatest care, shows the particles of gold with beautiful distinctness when a fragment of the trituration is dissolved upon a slide and under a glass cover. A thousand beautifully bright and minute particles of gold are seen upon a perfectly dark background, bearing a very close resemblance to the starry sky, even the twinkling

and gleaming of its miniature stars. When at rest in a crystallized medium they can be seen to best advantage, each particle appearing distinctly rounded in form; but it is not possible hitherto to determine with certainty whether they are spherical or not, still the higher powers of the microscope indicate this condition, as it is not possible to bring all parts of a single particle into focus at once, *the centre appearing more distinct* while the edges are diffused; and *vice versâ*, with varying focal distance.

When floating in liquid, molecular motion of the particles is very plain, and affords an interesting and beautiful sight, but gives no opportunity for careful inspection or measurement. It is, however, obvious at first sight, that unlike the stars in the sky, these little golden bodies are nearly of equal size, the differences not becoming apparent except by measurement under high powers.

The process of freeing these triturations from sugar of milk by washing does not succeed, owing to the small proportion of gold and the suspension of the gold in the liquid. It is necessary to melt a small quantity with a drop of water on a slide, spread it out well while the solution is quite clear, and dry it by moderate warmth to crystalline transparency, which will afford ample time for examination before regular opaque crystals begin to form. In a preparation of this kind, the micrometer, the diameters of which were equal to $\frac{1}{600}$th mm., could contain, side by side, from one to two of the minute particles of gold, proving them to measure from $\frac{1}{600}$th to $\frac{1}{1200}$th mm.; and, admitting the possibility of three to be able to lie side by side across a division of the micrometer, it would give the minutest particle of precipitated and triturated gold the dimension $\frac{1}{1800}$th mm., which is a very minute object, considering that 1 mm. is equal to about 0.039337 (or about $\frac{3}{100}$ths) of an inch.

The dark field exhibited these particles with the utmost distinctness, showing clear dark spaces between them with the lower powers. In order to see if these clear spaces contained some particles invisible with the lower objectives, it is well to select a certain group of particles—a constellation, as it were—and to mark it well with the eye or marker so as to be able to recognize it after changing objectives. Then count the number of particles

in the group, and examine closely the clear spaces between them for any dim spots or marks requiring higher powers, which should then be tried in succession. If, in this manner, I discovered any indistinct points with the lower powers, I have never failed to resolve them into their real shape by any power over two hundred diameters; while with the highest objectives the field was left entirely clear between the luminous gold particles, not even a cloudy or nebulous spot remained to leave any doubt of the objects seen there. This proves quite conclusively that there are no smaller particles of gold present than those measured as above stated. Another strong proof of the absence of imperceptibly minute particles is the uniformity of size, which does not vary from the dimensions given. In the case of leaf-gold there is a great diversity, but the smallest particles are so plainly visible that were there any still more minute, their gradation could readily be traced with magnifying powers from one hundred to seven hundred diameters, while really there is nothing that cannot be seen with perfect distinctness by means of moderate amplification.

The second trituration of precipitated gold was examined in the same manner. While Mayrhofer saw in his solution held in a watch-glass, innumerable particles floating about, my examination showed the difficulty of getting the gold free from the sugar of milk in such a solution where it will sparkle and glitter with most disturbing effect. Dried on a slide, as above, the second trituration exhibits the gold particles with perfect distinctness, but less numerously, a hundred or a hundred and thirty being in the field at a time. They possess precisely the same dimensions as those of the first trituration, *i. e.*, from $\frac{1}{600}$th mm. to $\frac{1}{1800}$th mm., nor does the most careful repetition change this result. The third trituration permits but three to five particles of gold to appear in the field at a time, and not without patient search through many specimens. In numerous instances the gold is not found at all. When found and measured, the particles will be found of precisely the same shape and size as in the two preceding triturations. Neither will the most advantageous light, whether that of the sun or lamp, nor manipulations of objectives and mirrors, disclose any smaller particles of gold;

but sometimes minute crystals of sugar of milk, as before stated, and these, though very minute, are not immeasurably small.

After patiently completing these observations, under the preconceived idea that the precipitated gold had been reduced to the above degree of fineness by trituration, the pure precipitated powder was had and examined. In this case, there is no sugar of milk to contend with. A minute particle of gold precipitate was mixed with a large drop of balsam, in a watch-glass, and rubbed together for several minutes; a fragment of this, placed upon a slide, and under a glass cover, showed with utmost clearness and brilliancy the minute particles of gold in a condition admitting of easy measurement. In many trials, only from one to three particles could occupy the space of the micrometer, which would make their dimensions $\frac{1}{600}$th mm. to $\frac{1}{1800}$th mm. *To my surprise they were of exactly the same size as in the triturations, which, though carefully made with sugar of milk, had not reduced the particles of precipitated gold at all.*

Evidence was constantly increasing that trituration with sugar of milk does *not* reduce the particles of hard substances beyond a certain point, and that it does not reduce them at all if they are very minute in their original state.

Having just completed some examinations of triturations of *copper filings and precipitate*, which seemed to manifest the power of trituration to reduce this metal to great fineness, a sample of precipitated copper, prepared with balsam as above, showed, upon examination, that the untriturated particles did not vary in the least from those which had been triturated, the largest particles measuring about $\frac{1}{100}$th mm., the smallest $\frac{1}{1200}$th mm., making allowance for extreme largeness and smallness; but as some of the largest particles may have been conglomerations, the average size of particles may be stated as $\frac{1}{800}$th mm.

Before arriving at these results, I had prepared, by Dr. S. Whitney, the first, second and third decimal triturations of precipitated copper. It would only be a repetition of what has already been stated, if the details obtained from the examination of the triturations of copper were given in full. Suffice it to say, that the simplest of technical means revealed that in *these preparations, from the first to the third, the particles of metal did not*

vary in the least in dimensions from those of the pure untriturated copper powder. As stated above, these were $\frac{1}{600}$th mm. to $\frac{1}{1200}$th mm. To those who repeat these examinations, I would recommend particular care in assuring themselves that there are no smaller particles present than of the dimensions given. The entire clearness of the field, together with the uniformity of size, only recognized with high magnifying powers, are proof of the limit to which reduction can be carried when copper and other metals are triturated with sugar of milk.

To confirm this observation, or to see if possibly the small proportion of copper with so large a quantity of sugar of milk had obscured the result, two triturations were prepared by me from the first decimal of Dr. Whitney, in the proportion of 20 of the first to 40 of sugar of milk, and of this a third was prepared in the same proportions. Examination revealed not the slightest difference in regard to the size of the particles, which remained as they were in the pure metallic powder.

But, not satisfied as to this, a quantity of the last trituration was dissolved in the porcelain mortar, in pure water, and ground hard for an entire hour. The feeling which this imparted to the hand was quite different from that experienced while grinding sugar of milk. In this case, the mass imparts a sensation of smoothness, which increases as the sugar of milk adheres to the mortar, by which we became aware that the pestle is not in contact with the mortar, and that consequently particles of matter completely escape its grinding force. With nothing but a watery liquid, red with copper, intervening, we feel the grinding of the pestle, and have proof that at all events the particles of metal cannot escape contact. Nevertheless, microscopic examination disappointed my expectations, for the particles of copper absolutely refused to be further reduced in size, $\frac{1}{600}$th mm. to $\frac{1}{1200}$th mm. clearly being the limit of their dimensions, and not only did farther division cease, but there appeared larger scales and plates of bright copper, measuring $\frac{1}{150}$th mm. to $\frac{1}{600}$th mm. These were produced by the rolling together and flattening out of several small particles into minute plates, under the pestle. Mayrhofer has mentioned a similar appearance.

As to the possible solubility or dynamization of copper and

gold, it is out of the question, considering that the smallest possible particles of these metals can be distinctly seen when magnified forty times, and many of them with a lower power than that.

There still remains to be recorded the results obtained from triturations of crude copper filings, obtained by means of a very fine watchmaker's file. Having experienced the difficulty of observing metals in small quantities, triturated with large quantities of sugar of milk, as in the centesimal triturations, I prepared a series in the proportion of $4\frac{1}{2}$ grains of copper to 10 grains of sugar of milk, the latter quantity being estimated as just sufficient to prevent the copper from adhesion and lumping. Mounted on a slide in different ways as described, to insure different views, the copper appeared perceptibly comminuted. The larger particles had not all been crushed, yet many of them had been considerably subdivided, with much greater ease than leaf-gold. The largest particles measured $\frac{1}{2}$ mm., the smallest not less than $\frac{1}{1200}$th. This is the utmost limit of minuteness, and $\frac{1}{800}$th would be a fair estimate, not only in regard to the copper filings but also to the precipitate.

The second and third triturations of this series exhibited no farther reduction of particles, except that the largest ones of the first had been reduced to $\frac{1}{100}$th mm.

Mayrhofer speaks of copper as rolled up into balls, and "balls within balls." I could discover nothing of the kind. The appearance he describes must have been owing to the imperfect defining power of objectives of that period—a fault which has long since been overcome. It also became evident very soon that Mayrhofer's method of dissolving triturations for examination in a watch-glass, renders vision impossible, for reasons stated above.

Lead behaves differently under the process of trituration. As in the case of the other metals, the centesimal triturations led to disappointment in regard to the comminution of this metal. In the first trituration, examined in a dry form, isolated fragments of lead could be seen scattered sparingly like black spots throughout the specimen examined with direct light, although the trituration had a bluish-gray appearance to the naked eye. Dis-

solved in water, some fragments of lead quickly sank, and the smallest floated on the surface, partly buoyed up by adherent air. A portion of this sediment, when magnified, showed numerous lead particles, or rather lumps, large and shining; not dull and oxidized, but of bright metallic lustre. In a specimen of a trituration made more than ten years ago, the particles of metal were as bright as if newly cut, apparently proving the great and very useful preservative power of sugar of milk. The particles measured $\frac{1}{8}$th to $\frac{1}{4}$th mm. The second and third centesimal triturations contained so few of these fragments that their farther reduction in this proportion of sugar of milk seemed more than questionable.

A series of triturations were therefore prepared by myself in the proportions of:

I.	Lead, 15 grains.	Sugar of Milk, 5, 10, 15, and 25 grains.			From this the
II.	" 5 "	" " 5, 10, and 20 grains.			From this the
III.	" 5 "	" " 10, 20 and 30 grains.			

These were all persistently and patiently triturated and examined in succession, but with results so uniform that the facts can be related briefly, and without detailed account of each trituration. The lead is ground very easily with sugar of milk. It is friable, and not ductile nor tough; and with a hard gritty substance like sugar of milk, it can actually be felt to grow fine and soft. The trituration of fifteen grains of lead to five grains of sugar of milk was a uniform blackish gray mass, which, when magnified, seemed homogeneous; the lead and sugar of milk having became homogeneously blended, so as to render the lead particles by themselves invisible. When dissolved it formed a black solution, which, under a glass cover, exhibited very minute particles of lead, glistening with the dim lustre of lead, less bright than gold or copper. In watery solution, the lead conglomerates very persistently; and it is difficult to discern the smallest particles, which are very minute, yet apparently large particles of $\frac{1}{4}$ mm. could be easily seen, varying from that size down to $\frac{1}{2400}$th mm. This is, however, illusory, for, after mounting various specimens from the successive series in balsam, the individual particles were readily separated, show-

ing that the largest measured $\frac{3}{500}$ths, or about $\frac{1}{250}$th; and the smallest from $\frac{1}{2400}$th mm. to $\frac{1}{6000}$th mm. These proportions did not vary throughout the series. This evidently proves that *while the proportion of sugar of milk is lessened, the reduction of lead and other metals is increased; but the limit is reached after the first trituration*, and no difference appeared thus far, owing to slight variations in the proportions of metal and vehicle. The problem is how to get rid of the sugar of milk. This may be done by filtering and examining the filter, upon which the lead forms conglomerations. The best way is to dissolve a small fraction of a grain on a slide, and to dry to crystalline clearness: this will show many isolated particles; or it may be dried till it forms regular crystals, and then mounted in balsam. If we are fortunate, these crystals will leave intermediate and perfectly clear spaces, showing numerous separate particles of lead, the appearance of which, owing to their dim gray lustre, requires experience to distinguish properly.

Metallic mercury was also examined by Mayrhofer in its triturations only; in which, as he observes, its particles are spherical in shape, non-transparent, and held together by a gauze-like pellicle; and, according to that observer, the particles of mercury are traceable to the tenth dilution, etc. The views I was able to obtain gave a different aspect. In dissolving the trituration, the minute globules or particles of quicksilver coalesce, not only into groups of globules, but into solid drops; at any rate, we have no evidence that they do not reunite. The trituration, when examined as a dry powder, shows many coarse particles of mercury dimly scattered through the sugar of milk. In solution upon a slide, the globules are of variable size, of bright lustre, and globular. By rubbing a minute globule of mercury with a large drop of balsam, first in a watch-glass for several minutes, and then transferring a particle of this to a slide, and rubbing it hard with a blunt glass rod for some minutes longer, the particles of quicksilver will be found to have been reduced to a great degree of minuteness. Seen with lower powers it looks like a white cloud, which, with the higher objectives, is dissolved into distinct particles, measuring from $\frac{1}{3000}$th to $\frac{1}{4000}$th mm. and less, which is more minute than the lead particles, and

is a degree of reduction which is reached in five or six minutes, while hours of grinding with much sugar of milk has no effect beyond a coarse division of matter. Oil and glycerin reduce mercury very well, but not so well as the tougher balsam.

Iron, which I have also examined, behaves very much like gold. Triturated with sugar of milk it is reduced to a considerable degree of fineness, and is rather more friable than gold. It is not easy to recognize it, owing to its dimness as compared with gold; but the particles are polished and bright; not tarnished or oxidized, even after having been kept in the trituration for ten years or more. In the size of its particles, it is like those of gold-leaf; and they do not vary in the three centesimal triturations.

Silica was likewise made the subject of investigation, and a detailed account of the result will be found in the *N. E. Medical Gazette* for June, 1878. The result was as follows: Pure silica, in the form of powder, as obtained as a precipitate from a solution in potash, consists of particles measuring from 1 mm. to $\frac{1}{1800}$th mm. in diameter. In a specimen of a trituration prepared with one-half of its volume of sugar of milk, which was removed by washing, the particles of silica presented the same dimensions as above, except that the largest were reduced to about $\frac{1}{2}$ mm.; while a sample of pure silica, triturated by itself, without sugar of milk, had particles measuring from $\frac{3}{100}$ths mm. to $\frac{1}{1800}$th mm., showing that only the largest particles had been reduced. In this imperfect state of subdivision, silica is not soluble, so far as known. It exists, however, in a soluble state, and can be easily prepared as soluble silicic acid; a condition known since the time of *Berzelius*, who also produced the metal silicium, of which, however, our school has taken little, if any, notice. We are forced to the conclusion that wherever a solution of silica triturations have been used in provings or in disease, the result should be set aside as unreliable.

REVIEW OF MAYRHOFER'S AND OTHER METHODS OF EXAMINATION.

Mayrhofer asserts that he has traced these metals into the tenth and fourteenth dilutions or potencies; and he was led to this

conclusion by examining these dilutions in a watch-glass; at any rate he states no particular precaution or method employed in this most difficult of tasks. It will be readily evident to any one willing to repeat this experiment that this method, to say the least, is very unsatisfactory and deceptive. Even with distilled water, after repeating the process of dilution in the usual manner, through as many vials, the crystals of sugar of milk and other impurities obscure the view. The only proper way is to place drops of the dilution on slides and under covers, of the perfect cleanliness and purity of which we have first assured ourselves by use of the microscope. In this way we may discover one or two particles of a metal in the fourth, and possibly in the fifth dilution; but these particles are only found after examining numerous specimens, and, when measured, do not differ in size from those found in the triturations, or in the precipitated powder of metals. Their solubility is entirely out of the question, as far as their reduction of size is concerned; and their presence in the dilutions above the fifth is entirely accidental.

What Mayrhofer saw, or may have seen, were probably the same glistening impurities which the precaution of careful washing cannot remove from vials, especially if alcohol is used. This will deposit the sugar of milk from any solution, and offer many deceptive appearances. These glistening particles of inorganic, or possibly organic matter, which have hitherto, on Mayrhofer's authority, supported the confidence in the theory of progressive reduction of insoluble substances, can now be distinctly seen and measured. They are transparent, and resemble none of the substances examined, except sugar of milk, and are as readily distinguished from them as larger and more familiar objects are distinguished from each other. Another test for these metals is that of their solubility in acids. Thus, if examining copper and silver, and we are in doubt as to which is metal and which is impurity, place a minute drop of nitric acid on the edge of the glass cover, observing the effect closely. If a metal soluble in nitric acid is present, there will be an instantaneous commotion, and the metal, if present, will have completely vanished. But not so the white crystalline particles which were there at the same time. These, if composed of sugar of milk, or, indeed, of

nearly any other description of organic matter, will be destroyed by the action of sulphuric acid placed at the edge of the glass cover, whence capillary attraction will swiftly spread it between the adjacent surfaces of the glasses. But it must be remembered that, though substances are reducible by other methods to a great degree of fineness, this is far from being reached by Hahnemann's method of trituration, and any observer may readily become convinced that all particles of metals and other hard insoluble substances are very easily seen by low powers of any good microscope, and that such particles belong to the coarser class of microscopic objects.

As Mayrhofer's and Segin's statements have chiefly supported the theory of divisibility of insoluble substances by trituration, it is necessary to review briefly the means and methods at their disposal. Mayrhofer's process of dissolving a tenth of a grain in as large a quantity as five drops of water has already been commented upon, as well as the absence of the proper precautions for distinguishing the sugar of milk from the metals. There is evidence that the objectives used by Mayrhofer gave a distorted image, which is not a fault of the observer, but only an imperfection of the instruments then in use.

The figures stated by Mayrhofer as the result of measurements have had much weight in establishing the belief in the vastness of the divisibility of metals. He speaks of magnifying his objects from 40,000 to 90,000 "times" with objectives of a magnifying power of 200 to 300 diameters. These huge figures were merely an old-fashioned form of stating microscopic amplifications in *squares of the diameters*, conveying, especially to the inexperienced, the idea of far greater magnifying powers than the reality warranted, and far greater than ever has or will be reached, when 200 or 300 diameters was actually all that was attained. Still those figures have been quoted as representing actual enlargements, and have been accepted as proofs of the infinite smallness of particles attained by trituration. What the real limit is I have endeavored to show on the preceding pages.

Mayrhofer had not the means of illuminating his objects as well as it can be done to-day (p. 169); and the absence of such means admits of doubt as to his having seen as many particles

of copper as he describes. That this was possible arises from the fact that he also made use of a larger proportion of metals to a lesser proportion of sugar of milk, as indicated at p. 167. In many instances metals were assumed by him, as well as by Segin, to have been reduced, merely because he saw fewer particles—a circumstance which rather indicates the contrary condition.

In reviewing the results we arrive at the conclusion that metals and other insoluble substances are not reduced to a greater degree of fineness by successive triturations; in many instances, if the substance is an impalpable powder at the outset, it is not reduced any more by trituration with the sugar of milk; in other instances it is not reduced beyond the first trituration.

The degree of fineness attainable depends on the quantity of sugar of milk used; and the smallest quantities of sugar of milk used permit the greatest degree of comminution. In the proportion of 1 to 100 the force of the pestle is expended on the sugar of milk, the interposition of which prevents the crushing of the substance intended to be reduced to fineness.

If extreme fineness, as hypothetically assumed, could render metals soluble in water or alcohol, it is now made certain that no such degree of fineness is reached by the method of trituration as hitherto practiced, considering the fact that such particles of matter do not reach beyond a size recognizable as coarse microscopic objects.

Hence we are forced to conclude that solutions, dilutions, and dynamizations are impossible, even after triturations "carried up" much higher than the third, and that, if these substances are used in practice, their third centesimal trituration may be admitted as the limit to which some particles may have been carried. In this light trituration is only an excellent and safe method of dividing the dose, nothing more. Dilutions made from triturations are so only in name.

To those who, like physicians, deal with matter and material organic forms, who hold that force cannot be thought of as existing independently of matter, the hypothesis or belief in the transmission of the dynamic force of matter to a vehicle like

sugar of milk, water, or alcohol, after the material portion has ceased to be present and has been left behind, can have no weight. If so, the question arises, how far the alleged pathogenetic and curative effects of certain insoluble substances can be believed to have occurred?

In accordance with the best of human knowledge and experience, whenever a pathogenetic or curative result has occurred, it proceeded from the presence of matter. Although this never has been divided to a degree so minute as presupposed by our ancient hypothesis, it was nevertheless minute enough to reach the interior of the organism, or to be acted upon and react by contact, and may penetrate wherever a blood-corpuscle can go; or it may be first dissolved by the gastric and other secretions; but it was *not dissolved or dynamized* before it came in contact with them.

Even here we are in great uncertainty, which can only be removed by careful experiments which suggest themselves. If, *e.g.*, gold and copper must enter the blood before producing a pathogenetic effect, can they be detected in the urine after having been injected into the veins or introduced into the stomach? This should and will be tried ere long. For the present we have a reasonable degree of evidence for assuming that such substances will act only when they are actually present. But what are we justified in concluding concerning dilutions made with these triturations? Have they not furnished good results? Have we not much evidence of their efficacy? Have not the 30th, 200th, and much higher potencies, produced memorable curative effects? We have no right to assume anything. It is certain that matter is *not* present in any dilution beyond the fifth, as any one who will may see for himself. For my own part I am locally forced to disclaim any evidence upon which to base such assumption or belief. Effects which followed the exhibition of such preparations must first be proved *to have been owing to the cause to which they are ascribed, and it must be shown that they could not have been the result of any other cause.*

This argument can be turned against and should be applied to the assumption, that pathogenetic or curative effects ascribed to preparations known to contain the substance must have been

produced by that substance and no other. The latter instance has one important point in its favor, and that is the unquestionable presence of the substance to which the effect is ascribed, while the higher dilutions have no such support.

There is no harm in continuing our safe methods of prescribing medicines, even if we are uncertain as to the presence of medicinal substances; but we must seek out means of rendering them not only safe, but actually efficacious, by assuring ourselves of the presence of active substance. We should dispel any chance of self-delusion. In the proving of *Carbo vegetabilis*,* the errors to which we are subject was shown, and the principle of counter-tests and counter-provings recommended as a system of additional precautions, where too much care cannot be exercised.

We have now before us three sources of error:

First. The great coarseness of medicinal substances where they were assumed to have been extremely fine, as in Carbo.

Secondly. The entire absence of medicinal substances where they had been assumed to be present, as in the dilutions; and

Thirdly. The danger of diluting our otherwise invaluable pathogenetic records with a multitude of non-pathogenetic symptoms, against which Hahnemann's conscientious and scrupulously inquisitorial precautions are but a very insufficient safeguard.

As soon as these facts are fully substantiated by other evidence they will inaugurate a considerable change in what we have accumulated in our Materia Medica, and fearless and full erasure will be desirable. This erasure will apply for the present to comparatively few remedies, namely, those belonging to the class of insoluble metals and other hard insoluble substances. It will, furthermore, apply only to provings made with so-called "dilutions" of insoluble substances, as, for instance, of gold. Hahnemann caused this to be proved in a very low trituration, the first centesimal (*Chr. Dis.*, p. 217), of which some provers took one hundred, others two hundred grains. We have no cause to reject such provings, unless careful reproving shall show their pathogenetic records to be untrustworthy. But when, in later times, we have had provings of gold made with the 12th,

* Transactions American Institute of Homœopathy, 1877.

100th, and 200th dilution, and probably in pellets, it will be henceforth necessary and unavoidable to omit them altogether, and not to mingle them with provings of preparations positively known to have been what their name implies,—*i. e.*, triturations of gold.

For the sake of greater security, and to do away with as much uncertainty as possible, it will be imperative to omit from present and future clinical guides, repertories, etc., "cured symptoms," apparently obtained by means of dilutions of insoluble substances, no matter how much or by whom they were triturated before the dilutions were made; no matter on whose authority the proving was made.

From the facts herein stated it follows that a change in our pharmacological practice is imperatively demanded. This change is of a very simple nature and without difficulties; it is:

First. That all substances, insoluble in water, alcohol, or any simple, innocuous menstruum or vehicle, be reduced to extreme fineness by any mechanical means best adapted to the purpose. That, wherever our old method of trituration answers this purpose, it is preferable to others.

Secondly. All substances soluble in water, alcohol, etc., or substances whose medicinal principles can be extracted by water, alcohol, or any other innocuous menstruum, should be prepared so as to form solutions, tinctures, extracts, etc., and these alone should be used for the preparation of dilutions or attenuations.

Thirdly. I would remind the reader of the object expressed in the beginning of this article, that the preceding observations deal only and exclusively with insoluble substances. It was unnecessary to furnish a list of such substances, because chemistry, physics, and pharmacology are far enough advanced to determine them. The actual nature and process of solution and solubility constitute a distinct subject for investigation, involving entirely different principles as a basis of research.

For the present we are enabled to estimate how far *insoluble substances* may be reduced, and how far they continue to be present in the preparations in use. In regard to *soluble substances,* we possess no positive knowledge as to their divisibility

or capacity for attenuation, and, for aught we know, it may be infinite, even with the simple means at our command.

While a great many substances like those we have treated of can only be available for therapeutic purposes in a state of mechanical subdivision, this does not preclude the possibility of treating many soluble substances in that way. Indeed, many vegetable substances, generally used as tinctures or extracts, would yield their entire medicinal properties to sugar of milk, of which alcohol or water would only abstract a part.

Again, there are many very friable crystalline substances softer than sugar of milk, which can be reduced by it, and "carried up" much higher than the metals or other hard insoluble substances.

VI.

THE RELATIVE EFFICIENCY OF THE DILUTIONS AND THE TRITURATIONS.

BY LEWIS SHERMAN, M.D., MILWAUKEE, WIS.

PHARMACOLOGY, in common with botany, chemistry and every other science to which it is related, is becoming more exact in its theories and in its operations. Homœopathic pharmacy originated with Hahnemann's system of attenuation. Dr. Hering contributed not a little to the accuracy of the process of attenuation, in the substitution of the decimal for the centesimal scale. When we shall have adopted a uniform basis for the attenuations and the proper solvent for each tincture, our pharmacy will stand on firm ground and its methods will approach exactness.

The choice of the form of medicinal preparation to be used is now to a great extent determined by accident or convenience. As pharmacology becomes an exact science this liberty of choice must be limited to a comparatively small number of medicines.

Medicines may be administered in the solid, the liquid or the gaseous form, according to the effects which it is desired to produce.

As a matter of course solids must be comminuted before they can be introduced into the circulation.

Experience confirms the prediction of theory, that the attenuation of solids promotes their absorption and renders their action quicker and more specific, and their elimination more rapid.

Experiment has proven that solids are taken into the circula-

tion *as solids*, provided the particles are small enough to pass through the capillaries. Even metallic gold, the most insoluble substance known, has been seen floating in the blood after it has been placed in the stomach in the form of fine powder.

Within certain limits, the process of trituration increases the number and diminishes the size of the medicinal particles in a given quantity of the original substance, and therefore increases the surface area of a given weight. For instance, if in making the second from the first decimal trituration, every particle of the medicine is broken into one thousand pieces, then one ounce of the second trituration will represent the same area of exposed surface as one ounce of the first trituration, while the actual weight is only one-tenth as much. If, again, in making the third trituration from the second, every particle of the original substance in the second is broken into one thousand pieces, there will still be the same amount of surface area, with only one-hundredth part (by weight) as much medicine, as there was in the first trituration.

The physiological effects of finely divided substances may be illustrated by dividing into two parts a mixture of chlorate of potash and cane sugar, both in the form of coarse powders, triturating one part briskly for ten or fifteen minutes, and afterward setting fire to both. In one case there is a prolonged irregular fizzle, in the other an instantaneous flash.

Since the size of the particles of sugar of milk and the asperities of the mortar and pestle remain almost unchanged in the successive triturations, we may safely infer that the above ratio of reduction in the size of the particles cannot be carried beyond the first few attenuations. If this inference is correct then the actual surface area would be less and less in the successive triturations, although the average size of the medicinal particle is diminished.

In regard to the pathogenetic and the therapeutic action of the triturations of the insolubles, I would suggest the theory that the specific effects of the insoluble substances depend in a great measure upon their insolubility. The following considerations may be adduced in favor of this view:

1st. The introduction of minute solid particles into the circu-

lation tends to break down or to build up the tissues: for example, *Aurum met.* produces bony tumors and cures caries of the bones.

According to *Huber*, *Argentum met.* acts principally upon the articulations, the bones, the cartilages, the muscles, tendons and ligaments, and the glands.

Baryta carbonica produces cramps in the muscles and resolves glandular swellings.

Calcarea carbonica is useful in scrofula and rickets.

Calcarea phosphorica is believed to cure softening of the bones.

Cuprum metallicum and its insoluble salts produce cramps of the muscles.

Carbo vegetabilis has been used by physicians of both schools in lymphatic, varicose, and gangrenous ulcers.

Hepar sulphuris calcareum cures chronic suppuration.

Mercurius or its insoluble salts softens indurations and produces ulceration of the bones.

Phosphorus produces necrosis of the bones and abscess of the liver.

Plumbum carbonicum produces cramps in the muscles and paralysis.

2d. The poisonous effects of Mercurius, Plumbum, Cuprum, and other insoluble minerals, are removed by the administration of substances which render these substances soluble in the fluids of the body. The poisonous effects of Carbonate of lead may be removed by the administration of Iodide of potassium, which converts the carbonate into Kali iodatum, soluble Iodide of lead, and Carbonate of potash, eliminated by the kidneys.

3d. The soluble salts of these same minerals do not produce the poisonous effects of the insoluble preparations.

Plumbum aceticum may be given in large doses for a long time without producing lead colic or paralysis, whereas the amount of Plumbum carb. which is required to produce lead poisoning is comparatively small.

Aurum muriaticum, although soluble in water, is decomposed by the alkaline salts in the blood, and insoluble metallic gold is precipitated in fine powder.

Soluble *Mercurius corrosivus* is converted into insoluble *Mercurius dulcis* after its introduction into the body.

4th. We can readily imagine that a solid particle of an insoluble substance, carried by the circulation into an engorged capillary, might force its way through and clear up the obstruction.

The momentum of a body is in direct proportion to its weight. The power of a solid to remove obstructions in a tube varies with its specific weight and the smoothness of its surface. A leaden round ball would do more execution than a cubical block of wood of the same bulk, partly on account of its greater weight and partly on account of its smoothness of surface. For the same reasons a globule of Mercury would be much more likely to force its way through an obstructed capillary than a particle of carbonate of lime. On the other hand a solid particle of Carbonate of lime would be much more likely to form a nucleus for the building up of bone-tissue than a particle of Mercury. Again, a particle of Silica with its sharp edges may, by its mechanical action as an irritant, check the process of suppuration in a diseased surface. It is very evident that the overloading of the system with solid insoluble particles would cause degeneration of the tissues. This would account for the ulcerations and general softening of the healthy tissues produced by the long-continued use of Mercury.

What are we to think then of the dilutions of the insoluble substances? Some have affirmed that these so-called dilutions are not what they purport to be,—true solutions containing the same proportions of the original substance as the corresponding triturations. The following considerations may aid in bearing upon the settlement of this question:

1st. Mercury is one of these so-called insoluble substances. This substance is volatilized rapidly at high temperatures and slowly at low temperatures. A mass of liquid Mercury soon surrounds itself by an atmosphere of mercurial vapor. This vapor penetrates not only other gases but water and other liquids. Though there is no direct proof that Mercury below its freezing-point gives off vapor, there is the strongest of indirect evidence in the fact that water in the frozen state continually gives off

vapors. Frozen clothing dries in the breeze; the snows of winter disappear without liquefying. This reasoning proves that Mercury is to some extent soluble. Gold, one of the most insoluble substances known, is completely vaporized at a high temperature.

In the liquid form, below its boiling-point, it gives off quite perceptible vapors. Analogy leads to the belief that even in the solid form more or less vapor is given off. The degree of volatility varies for every substance, but there is no substance which is not to some extent volatile, and hence to some extent soluble.

Hahnemann believed that any substance might be dissolved in water in the proportion of one to one hundred millions (1—100,000,000). Experiment proves that in case of many substances this is not true. It is true, however, that if the particles are sufficiently fine they may be held in suspension in a liquid for a considerable time. The length of time depends upon the fineness of the powder and the ratio of its specific weight to that of the liquid.

Hahnemann directs the fourth centesimal attenuation to be made by adding to one grain of the third centesimal trituration fifty drops of distilled water and fifty drops of strong alcohol. Our best pharmaceutists now use the sixth decimal trituration in place of the third centesimal, and use the seventh and eighth decimal liquid attenuations merely as vehicles for preparing the ninth decimal dilution. The seventh is made by adding to one grain of the 6^{x} trituration 9 m. of distilled water, and when the sugar of milk is all dissolved making the eighth before the undissolved particles of the medicinal substance have had time to settle to the bottom. The eighth is made with dilute alcohol, also for immediate use in preparing the ninth, which is made with strong alcohol. There are good grounds for believing that this ninth decimal attenuation is really a solution, at least in case of all but a very few of the most intractable of the metals, such as gold and platinum. If doubts remain in regard to the reliability of these preparations, the probability of solution would be increased a thousand fold by carrying such substances in trituration to the ninth decimal attenuation, and then preparing the twelfth in liquid form.

We pass now to the liquid attenuations or dilutions. A dilution is a solution containing less of the original medicinal substance than the stronger solution from which it was made. In a solution the particles of the dissolved substance exist in the liquid form. The molecules are completely separated from one another by intervening spaces, and there is perfect freedom of motion between them. Hence it follows that the process of dilution does not produce attenuation in the same scale that the process of trituration does. The ultimate particles in the sixth dilution are no smaller than those in the third dilution. They are only farther apart. In the liquid form molecules are in the condition of greatest chemical activity. Chemical combinations take place with extreme slowness, if at all, when the reagents are both in the solid form. When one is liquid and the other solid, chemical action is possible, and often takes place with considerable freedom, but when both of the reagents are in the liquid form the action is immediate or even violent. The gaseous condition is not as favorable to chemical action as the liquid, on account of the comparatively great distance between the molecules.

The choice between the solution and the trituration then resolves itself into the question in each individual instance, whether a mechanical action or a chemical action is desired, *i. e.*, whether the medicinal substance is to act in the form of small masses of indefinite bulk, or in the form of single definite molecules. There is no doubt that by far the greater number of specific medicinal effects are produced through molecular action. But we must not therefore forget the specific mechanical effects of medicines. These are just as real and just as amenable to the laws of science as the chemical action. The real ground of choice between the two is in the provings. If the provings have been made with solids, then the cures must be made with solids. If the provings have been made with liquids, then the cures must be made with liquids. I refer here only to the so-called insoluble substances. It is comparatively immaterial whether a soluble medicine is dissolved in a bottle or in the stomach.

It is essential, however, if we would get the specific effects of an almost insoluble substance, that it should be administered in the form in which it has the power to produce these specific effects.

VII.

DIVERSE DRUG ACTION.

BY GEORGE M. OCKFORD, M.D., BURLINGTON, VT.

THE dogma of primary and secondary symptoms was clearly defined by Hahnemann. In his *Lesser Writings* he tells us that "most medicines have more than one action," and further he designates these actions as direct or primary and indirect or secondary, and this doctrine of primary and secondary effects has been recognized by most of the prominent writers of the homœopathic school.

In 1874, Dr. E. M. Hale, in a paper read before the Institute, called attention to the importance of distinguishing these different classes of symptoms in prescribing for diseased conditions. But the research and investigation of others have shown that drug action is variable according to the dose administered, or in other words, that different doses of the same drug are capable of producing different phenomena.

Dr. William Sharp, of England, after years of study in this direction, does not hesitate to affirm that there is an antagonism between the action of large and small medicinal doses when administered to the human organism in a state of health, and a number of experiments published in England last year go far towards confirming his views.

Dr. Anstie and others made experiments with *Aconite* and *Digitalis*, and the result of these experiments, made with great care, tended to show that there is a reverse or antagonistic action between large and small doses.

With the testimony of such men, there can be no doubt that,

at least sometimes, opposite effects are produced by the action of a large and small dose of the same drug. While it may be a question whether this reverse or antagonistic action is constant, and applicable to all drug effects, it seems to me that an examination of the published effects of drugs point towards an affirmative answer to this question, and this, with some experiments coming under my personal observation, convinces me that further study in this matter would amply repay; and a thorough solution of the question of drug action would go far towards solving the mass of apparently contradictory symptoms published as the pathognomonic symptoms of a given remedy or remedies.

Every one admits that appreciable doses of drugs produce certain pathological conditions when administered to a human organism in a state of health, and it must be evident to every true student of Materia Medica who has studied the provings of potentized drugs, that the action of these minute and apparently inappreciable doses when administered to the healthy organism is as marked as the effects of the large doses; and all who have used these high potencies in their practice must have noticed the violent aggravations following their exhibition at some time, and the frequency of the occurrence and the well-marked character of the phenomenon are conclusive evidence that the result is not accidental, being caused, not by the course of the disease, but by the action of the drug itself. To combat these aggravations, we employ either a lower or much higher potency, with a beneficial result.

An examination of our provings would tend to point out a reverse action, and further, that the action of the high potencies corresponds nearly to the secondary effect of low potencies, and the primary and secondary effects being opposite in character, the stage of excitation being followed by depression, and the violent cathartic by a state of constipation, etc., it follows that the action of crude drugs and highly potentized drugs in their effects upon the healthy human organism is reverse or antagonistic.

In order to illustrate this point more fully let us compare the provings of certain drugs, and as a typical drug we will take *Sepia*. There is an admirable proving reported in the Proceedings of the Institute for 1875. The preparations used were the 3d, 30th

and 200th attenuations, and although the drug in its crude state is almost inert, yet from the administration of these potentized doses, an array of symptoms is recorded, involving almost every organ in the human body, and by far the greater number were the result of the administration of the 200th attenuation. And there is a marked difference in the results obtained from the different doses. The only place assigned Sepia by the United States Dispensatory, is among the antacids, and it directs that the bone, like chalk or oyster-shell, may be given to correct acidity of the stomach, and it is not even deemed of sufficient note to be ranked among the officinal drugs either of the British or United States pharmacopœias.

The primary effects of the crude drug amount to a nonentity; and although its secondary action may have been some form of disordered stomach, yet it was so slight as to be deemed of no account. Now compare this with the results of administering the drug in a potentized state, and mark the difference in the symptoms.

The crude drug does nothing except to correct acidity. The third attenuation produces "a craving for food, amounting to a constant hunger," while the appetite is materially impaired by the action of the 200th. The 30th produces "sour eructations," and the 200th "a very putrid taste, causing nausea." "Thirstlessness" is among the recorded symptoms of the low attenuations: "the patient is not thirsty, even at meal times;" while as a result of the 200th we find "a great desire for water, drinking a glassful at a time." The 200th also causes a "desire for acids," an effect the opposite of that of the crude drug. We might compare these symptoms much farther, but let this suffice.

An analysis of the provings of other drugs gives similar results, and presents further evidence of the antagonistic or reverse action of large and small doses. The old school of medicine has long recognized a difference of action in large and small medicinal doses of drugs. Nux vomica, given in small doses, is tonic in its effect, giving strength and vigor to the system, but given in large doses it produces heaviness and weakness, with the formication and trembling of imperfect palsy. Quinine, one of the most widely used brain stimulants, in the ordinary medicinal

doses, is a direct and powerful stimulant of the brain, while from the action of massive doses we have great prostration, with the action of the heart and other organic functions depressed.

To what extent this difference of action may be carried it is impossible to state, but a knowledge of it may help us to understand why such a mass of opposite symptoms are gathered under the pathogenesis of one remedy, and which apparent incongruity has been a stumbling-block to the opponents of homœopathy. In the *Chronic Diseases* and *Materia Medica* of Hahnemann, we have all sorts of symptoms, the provings having been made with crude and attenuated drugs; they are all recorded as being the result of administering the drugs to healthy organisms; some are totally different in character, pointing to exactly opposite effects. There is no doubt that all were developed in the provings, but is it not a reasonable supposition that this apparent antagonism is due to the different doses made use of?

And further, if this law of antagonism is true, and the action of high potencies corresponds to the secondary effects of crude drugs, it shows conclusively that these secondary effects are the result of drug action, and not a reaction of the organism against the drug, as is claimed by some writers of our school.

A further use of a knowledge of this law would be to systematize our Materia Medica by arranging the provings according to the different doses producing the phenomena. And it would do much towards solving that much-mooted question of dose, and demonstrate when to employ crude drugs and high or low attenuations. The law of *similia* teaches us to employ small doses for the cure of a diseased condition resembling the symptoms produced by a large dose, for we find in the British *Monthly Homœopathic Review* for August, 1876, a definition of that law, as follows:

"There is no difference of opinion among homœopaths, as far as we ever heard, as to the meaning of *similia similibus curantur*, viz.: that a drug given in a small dose will cure a case of disease that presents symptoms similar to those produced by a large dose of the same drug when given to a healthy person," and is it not the same law that decrees that a diseased condition presenting symptoms similar to those produced by a given

potency would be cured by the administration of the same drug in either a much lower or much higher attenuation?

The difference of opinion existing in our school regarding the question of potency and dose calls for a thorough examination of this subject, and I believe that it will, if examined with care, and rightly understood, do much towards harmonizing conflicting elements, and serve to assuage the asperity characterizing the discussions between the opponents and advocates of "high potencies."

VIII.

IDIOSYNCRASY IN RELATION TO MEDICINES.

BY E. M. HALE, M.D., CHICAGO.

THE word *Idiosyncrasy* is made up from three Greek words (ἴδιος peculiar, ς́ύν with, κρᾶσίς temperament), and is a term for "peculiarity of constitution or temperament, the disposition or habit of body peculiar to an individual." It expresses the fact that each man is not one of a mass of men as one grain of sand is of a sandhill. It is a common saying that each man has some idiosyncrasy, meaning that he has some mental or physical susceptibility to certain influences, or a peculiar *in*susceptibility to certain influences.

A study of this subject is of great importance to the physician, for not only does idiosyncrasy relate to the remedial action of medicines, but to the effects of climate, diet, bathing and other matters. This paper will, however, be limited to those instances of idiosyncrasy which relate to the effects of medicinal agents. There are five forms in which idiosyncrasy may manifest itself.

1. A peculiar *susceptibility* to the action of certain drugs.
2. An equal *insusceptibility* to, or tolerance of, certain drugs.
3. The production of *secondary* symptoms without being preceded by the *primary*.
4. The production of symptoms perfectly *unique*, or altogether different from ordinary effects of the drug.
5. An insusceptibility to attenuated drugs, or *vice versa*.

I. The peculiar susceptibility to the action of particular drugs possessed by certain individuals was observed and recorded by

the most ancient physicians. The "helleborism" of the ancient Greeks, so graphically described by Hahnemann, presented some illustrations of this idiosyncrasy. It was observed that certain persons were easily and even fatally affected by small quantities of *Hellebore*, while others were but slightly affected by large doses. A more familiar instance is the well-known immunity possessed by certain persons against the poison of *Rhus*. I do not know whether a person unsusceptible to the poison of *Rhus tox.*, would possess the same immunity to the poison of other members of the *Rhus* family. There are those who cannot pass within fifty rods of the Rhus tox., especially after a rain, on a warm windy day, the wind blowing from the plant towards them, without suffering from its poisonous effects. And there are others who can pluck the leaves with impunity, and even rub them on the skin or chew them without feeling any bad effects.

Some patients possess such a susceptibility to the action of Rhus that a few drops of the 3d dilution rubbed on the skin will cause the Rhus eruption, and are intolerant of its internal use in low dilutions.

A similar instance is the intolerance we sometimes find in some patients in relation to the topical application of *Arnica*. It has been suggested by some that this is a mechanical effect of the minute awns or needles in the flowers, but I have observed the same eruption to occur from its use after the tincture had been carefully filtered. I have even known it to cause erythema and irritation of the mucous surface when taken internally in the 2d dilution.

Cases of extreme susceptibility to the poison of *Ailanthus* have been recorded. Out of a party of children playing under the trees some would be attacked with symptoms similar to scarlatina, while others were unaffected.

I have known individuals to be severely poisoned by contact with the leaves of *Clematis* or *Ranunculus*, the characteristic eczema appearing shortly after the contact, and lasting a long time.

Not all persons are equally affected by the *Urtica urens*. I have known boys who could handle the nettle with impunity, while others were so severely affected that "life became a bur-

den" for many days. Cases are on record where the contact with nettles not only developed immediate urticaria, but attacks of a similar character recurred every year after, at about the same time.

Some persons appear to possess a singular immunity against the stings of insects or the bite of venomous reptiles. A physician whom I know is not at all affected by the stings of bees (*Apis mel.*). Others are so susceptible that death has been known to occur from a single sting. The puncture of the mosquito is not minded by some, and produces severe swelling and even pustulation in others. The bite of a spider is a trivial affair with a few people, and a dangerous affair with many.

A celebrated botanist of Chicago asserts that contact with the *Cypripedium* causes in his person all the symptoms of Rhus poisoning.

In recent French journals we find some very singular instances of violent erythematous and erysipelatous eruptions caused in a few persons by taking the smallest dose of *Quinine.* I have known one grain of Quinine to cause a severe attack of urticaria.

Chloral hydrate cannot be taken by some on account of the urticaria and erythema which it invariably causes. Others take daily large doses for weeks and months without observing any unpleasant symptom.

Sulphur in the smallest doses develops such cutaneous irritation in some patients that its use has to be very guarded. Others see no such effects in immense doses.

Mercury is so well borne by many that they boast that it is meat and drink to them. Incredible quantities taken for a long time seem to exert no injurious effects in such persons. There are others who are profoundly affected by incredibly small quantities. I have known the 6th of *Merc. cor.* in many instances to cause very serious effects, and the annals of our school contain instances where the 30th has caused salivation and other pathogenetic symptoms.

The same may be said of *Iodine* and the iodides. There are those in whom minute quantities of the Iodide of potassa causes serious and alarming symptoms.

II. What deductions of a practical character should the ho-

mœopathist draw from the preceding illustrations? Is it not evident that some important law should be the outgrowth of such facts? It is my conviction that the profession have neglected to recognize their importance. Can we expect a patient to receive benefit from Rhus tox., in any potency, if *that patient* is not affected by the poisonous influence of that plant? Can we expect to get good effects from *Apis*, in any dose, when prescribed for a patient who is not affected to any unpleasant extent by the stings of bees?

For many years I have been in the habit of making careful inquiry of my patients regarding any idiosyncrasy which they may have in relation to medicinal substances, and the results of my observations have convinced me of this fact, which may be formulated as an axiom, namely:

Persons having an extreme susceptibility to the toxical effects of any substance are very readily affected by that substance when given in disease, and in the high attenuations; and persons having an equally marked insusceptibility, *are not affected at all by such agent, in any dose whatever.*

III. Some persons are readily affected by certain drugs, but in a manner different from others, namely, they get secondary symptoms from ordinary pathogenetic doses, and primary symptoms from large doses.

An instance in point is a patient whom I have treated for years, and have found her possessing many curious idiosyncrasies. A small dose of *Podophyllin* produces laxative effects, whereas a large dose causes obstinate constipation, having the same effect as a large dose of Opium in this respect. A few drops of the 3d of Coffea makes her wakeful, but a cup of strong coffee makes her sleep.

In investigating the records of the many provings which have been submitted to me, I have found many illustrations of this idiosyncrasy.

IV. There is another class of persons who experience perfectly unique effects from almost any drug they may take; effects which differ from any recorded in our provings. Out of ten or fifteen provers of any particular medicine, there will often be one whose symptoms are so different from the others that we are inclined to

believe them due to some other source. But repeated trials will often show that they are the pure effects of the drug.

Right here a curious question arises. What is the therapeutical value of these symptoms? We certainly cannot use them with the same success as we can the *usual* symptom. If we select the drug on those symptoms alone, will they cure such symptoms in ordinary persons? I doubt it. I believe the drug selected by those unique symptoms will only cure diseases in persons having the same constitution as the unique form.

Take for instance the recorded facts relating to the *urticaria-producing* effects of Quinine in certain persons. Quinine might be prescribed for one hundred cases of urticaria and fail to cure all but *one*, and that single subject was cured because he or she had the peculiar idiosyncrasy which would render them susceptible to the urticaria-curing form of quinia. Many other illustrations might be cited, but this one is sufficient to show that we must admit this tendency in the constitution as an important factor in the analysis of many of our pathogeneses. Some of our most voluminous provings have doubtless been made by individuals who had a peculiar idiosyncrasy in the direction above noted. I will only instance Dr. Houatt, whose extraordinary provings and pathogeneses of certain drugs are either sheer fabrications, or the result of a perfectly unique idiosyncrasy. Such provings cannot possibly be of any value as remedies for the ailments of ordinary patients. They could only cure the ailments of patients having the same idiosyncrasy of the unique provers. It is my opinion that such unique provings should not be incorporated into ordinary pathogeneses, but should be published *distinct* from them, if at all. I am glad to see that the editor of the *Encyclopedia of Materia Medica* entertains the same idea, and has had the independence to carry it into practice.

V. There is another idiosyncrasy frequently met with by practitioners of all medical schools. I allude to the extreme susceptibility of some persons to very minute doses of all drugs, and also cases of *in*susceptibility to all but the most massive doses. The practical physician should fully appreciate the importance of such cases. In fact there are hardly any two persons who are equally influenced by the same quantity of any drug.

There is a certain class in the homœopathic school who pretend to prescribe in all cases of disease the same dilution of all medicines. They fix arbitrarily upon the 200th, for example, and prescribe it for young or old, male or female, and for all constitutions. Certainly this cannot be science! Will the 200th of *Sulphur* be equally valuable in case of two patients, one of whom can take for weeks Sulphur in almost any dose without observing any effects, while the other is extremely susceptible to the minutest material doses?

It seems to me that these are all questions which require serious and careful investigation, and I know of no subject more worthy the consideration of a society of physicians whose aim is supposed to be the advancement of the science of medicine, the perfecting of our materia medica, and the elevation of the art of healing.

IX.

NITRATE OF SANGUINARIA.

BY WILLIAM OWENS, M.D., CINCINNATI, OHIO.

"THE indications for its use are distinct and positive. A sense of constriction in the throat, with sometimes difficulty in deglutition. In bronchitis, pneumonia, and laryngitis, acute or chronic, this action on the throat is marked; in these it will prove curative.

"I employ it where there is an irritating cough and sense of rawness and constriction in the throat; the secretion is frothy or muco-purulent."—*From Scudder's Eclectic Journal.*

Physical Properties of Nitrate of Sanguinaria.—It is a very fine brownish-red powder, pungent, acrid, bitter and inodorous, soluble in alcohol, ether, water and oils; it acts as an escharotic upon delicate surfaces, and if moistened and confined to the surface of the skin will in a short time produce pustules.

Proving by J. H. W.

Aged 44 years; of bilious temperament; stout and unusually healthy.

The third decimal trituration was used, of which one-grain doses were taken, three times repeated.

December 12th, 10 A.M. Took first dose on tongue, of the dry powder. Soon experienced a bitter taste, extending back to the root of the tongue; slight acrid burning sensation on the tongue. In fifteen minutes observed water trickling from right nostril. Pain was soon felt in right eyeball, extending to the supraorbital region, pain of a sore, aching character; it soon extended

across the forehead and seemed to be deep in above the root of the nose. Watery mucus flowed freely from both nostrils attended by violent sneezing, repeated every few minutes, with profuse lachrymation, dimness of sight, as if looking through gauze or a mist, redness and soreness of the inner corners of the eyes, which feel as if swollen; the tears flowed over the cheek. In four hours the secretions of the nose, eyes, mouth and throat had considerably increased. Heat and burning of these parts, without thirst, was very marked.

At 2.30 P.M. took second dose, followed immediately by bitter acrid taste, roughness and dryness in the mouth and throat, with sensation of constriction in the throat, which passed off in fifteen or twenty minutes. There was increased flow of mucus and saliva, with sneezing and burning pain in forehead and the root of the nose, with aching and soreness in eyeballs, worse on pressure, increased flow of tears; the pain became more severe on the left side of the head, through the left temple; slight aching sensation, with soreness all over the head and scalp.

One hour after taking the second dose, feeling as if the nose was obstructed, with soreness, roughness and rawness on right tonsil. It became painful, attended with difficulty in swallowing, obstruction of the Eustachian tube, difficulty in distinguishing sounds, roaring in the right ear, while the catarrhal feeling in the throat increased.

At 9 P.M. the third dose was taken, with bitter acrid taste and burning sensation in mouth; sensation arising to nostrils as if he had taken strong horse-radish, causing tears to gush from the eyes, which soon became blurred, as if a thin film of mucus was spread over the sight; the mucus from the nose became thicker, having a sweetish taste and yellow color. The throat became very uncomfortable. Retired at ten and slept poorly, restless from feverishness and irritable condition. Thought the sore throat indicated diphtheria. Got up at two o'clock and had his wife to look and see if there was not a diphtheritic deposit there; she found nothing but a red and irritable spot.

In the morning raised great quantities of thick, yellow, sweet-tasting mucus; this continued all day. The sore throat also

continued, but was somewhat less toward evening, and in six days all the symptoms had disappeared, leaving him well.

Would not repeat the experiment, because it made his head and throat feel so badly.

Proving by S. G. W.

Healthy young woman, aged 23 years, light complexion, fair hair, blue eyes.

November 13th, 1878. Took one grain, 3d trituration; at 10 A.M. repeated every four hours, until four doses were taken.

In half an hour, burning in both nostrils; watery secretion from the nostrils; pain in left eyeball, extending over the orbit and left side of the head; drawing in the left temple; roughness on tongue, with bitter taste. In two hours watery discharge from nose increased, attended with sneezing. The burning had extended into the forehead and probably the frontal sinuses; the eyes were suffused with tears; redness of lids and conjunctiva; the tears flowed down the right cheek.

At 2 P.M. took the second dose, which was followed immediately by bitter taste, sensation of roughness, as if the tongue were burned, heat in the mouth, as if pepper had been taken, burning in the nostrils; pain in the eyeballs, as if sore, and aching and pressure in eyes. Heat and tension behind centre of sternum; sensation of tightness in the chest, inducing a short hacking cough; occasionally raises thin frothy mucus, which is very tenacious; sensation of burning in œsophagus and stomach.

At 6 P.M. took third dose. The watery coryza was greatly increased; burning of the eyes and throughout the air-passages, œsophagus and stomach; borborygmus and pain in abdomen, as if diarrhœa would set in.

At 10 P.M. took the fourth dose. Catarrhal symptoms somewhat abated, but the running remained; greater sense of dryness; the cough became harsh, leaving soreness and rawness in the throat and chest, with scraping, raw sensation in pharynx; belched up putrid-smelling gases, though she had eaten nothing since morning; she passed urine nearly every hour during the night, which on standing until morning weighed twenty-eight

ounces and deposited a white sediment; frequent rumbling in the bowels with sharp cutting pain during the night, as if discharge of stool or flatus would occur.

November 14th. Slept badly all night from frequent desire to urinate, and accumulation of mucus obstructing nose and bronchial tubes. As soon as she began to move she raised a quantity of thick yellow sweetish-tasting mucus; this continued all day, with great apparent dryness of the nose and throat.

November 15th. Quite free discharge from the nose of same kind of mucus, with coughing up of large quantities several times during the day. This continued for eight days, when it had quite disappeared. Slight dizziness remained all the time.

[I had abundant opportunity for observation in this case, and took down most of the statements at the time.—W. O.]

Provings by Wm. O., M.D.

Aged 55 years; healthy, stout man; subject to catarrhal affections from exposure only; bowels regular; urine normal; skin rather harsh, but warm and dry.

FIRST PROVING.—*February 12th*, 1878, 10 A.M., took by inhalation an extremely minute quantity of the fine dust of the powder. It attacked the mucous membranes of the air-passages with great violence; first causing sensation of heat and burning in the nostrils, forehead, eyes, throat, and bronchia. In ten minutes watery mucus trickled from the nose, attended by a free flow of tears; watery coryza, with burning pain in posterior nares and trachea, soon followed by tension, burning, and accumulations of mucus behind centre of sternum; great accumulation of mucus in bronchia and throat; pain in the left side of the head, with heat extending to parietal ridge and back to mastoid process, attended with sensation of stiffness in the muscles of the left side of the neck and top of left shoulder, as if from exposure to draft of cold or damp, raw air. In forty minutes after inhaling the tension and heat behind the sternum had increased, with desire to cough a short hacking cough; raised a little clear mucus; felt a strong desire for fresh air; mucus accumulated rapidly, was raised with slight effort, continued all day,

becoming thick and yellow towards evening. Slept poorly, on account of pressure in chest behind centre of sternum, and soreness with raw and rough feeling in right side of throat; the right tonsil was quite painful; also dry, sore, and raw feeling in nostrils, forehead and bronchia. Awakened on the morning of 13th with sensation of fulness and obstruction in head, which was relieved by a discharge of a large quantity of thick yellow mucus; there was also tightness, fulness, and soreness through the chest, relieved by coughing up a large quantity of thick, yellow, sweet-tasting mucus. These surfaces continued to throw off this matter for five days. The burning and the pressure in the eyeballs was quite severe. It was mitigated during the night, but did not pass off for two days, leaving a fulness and soreness as in ordinary catarrh.

In this proving the 3d decimal trituration was used.

SECOND PROVING.—*November 20th*, 1877, took one grain at 10 A.M., and at 2 and 6 P.M.

November 21st, took one grain at 9 A.M., and at 1 and 5 P.M.

November 22d, took one grain at 9 A.M., and at 1 and 5 P.M.

First day.—Immediately, bitter taste in mouth and rough feeling on tongue. In fifteen minutes, watery mucous discharge from the nose, with sensation of heat in nostrils. At 10½ A.M., sneezed three times, with increased flow of mucus from the nose, somewhat thicker; burning and pressure in the eyes; smarting in the eyes; aching pressure in the orbits, extending into the forehead and to left side of the head. At 1 P.M., injected conjunctiva, with smarting and burning at internal canthus of left eye; the eyes feel sore to the touch.

The second dose was taken at 2 P.M. Bitter taste, rough and raw, sore feeling on the tongue, extending to the fauces and tonsils, and rising to the posterior nares; tight, full feeling over the eyes, at the root of the nose, and through the forehead; mucus thicker and yellow, slimy, tinged with blood; eyes swollen, red, and painful to the touch.

At 6 P.M., took the third dose. Bitter taste; sore, raw feeling on tongue, palate, tonsils, and pharynx; discharge freely from posterior nares, still tinged with blood, especially from left side;

heat in forehead, very uncomfortable; bathed with warm water, which gave some relief; retired at 9½ P.M., feeling very uncomfortable, as if I had taken a severe cold, which was affecting me all over; awoke frequently, with dry mouth and throat, from breathing with the mouth open, the nose being obstructed. Awoke at six next morning in gentle, warm perspiration, feeling better.

November 21*st.* At 9 A.M. took again one grain as before. Thick, yellow, and greenish mucus had been thrown off quite freely all the morning; in half an hour after taking the first dose the watery discharge from the nose returned, with sneezing several times in quick succession. The cough became deeper and rattling; mucus coming up quite freely, with slight effort; soreness in chest, which continued all day.

At 1 P.M. took the second dose, and at 5 P.M. the third dose. The mucus from the nose became thicker and yellowish, tinged with blood; head felt full and inclined to ache; burning, pressing, aching, and sore pains in the eyes; frequent sneezing during the day and evening; restless at night; passed urine three times during the night, bright-yellow sediment; urine higher color than natural. But little appetite; everything tasted dry, like chips; coffee did not taste natural; wanted something succulent, not pungent, but soothing to the mouth and throat, which felt hot, dry, parched and raw.

November 22*d.* At 9 A.M. took a dose; bitter taste not so marked, but apparently more acrid, soon extending to pharynx and posterior nares; eyes and forehead, though full and pressing before, now became painful; was soon partially relieved by a copious discharge of mucus, mixed watery, clear, stringy, thick yellow, tinged with blood, from both nostrils. Took second dose at one P.M., and at 6 P.M. the third dose. The flow of mucus continued, with sneezing and uncomfortable feeling about the head all day, decidedly worse at night. Next morning the catarrhal symptoms reached the chest and bronchia, affecting these parts more than at any time before, causing pressure behind the sternum, spreading to both lungs and greatly increasing the sense of suffocation; feeling as if the air-passages were lined with thick stiff mucus or pus; toward evening this was

partially relieved by taking Drosera 3^d, repeated every fifteen minutes. At night the tightness returned until 2 A.M., when I went to sleep and slept well until morning. Awoke feeling better, and so continued during the day. Took Bryonia every two hours, and in ten days the symptoms had disappeared.

CLINICAL VERIFICATIONS.

CASE I.—I. I. B., merchant, aged 40 years, dark complexion; chronic posterior nasal catarrh, chronic bronchitis, and chronic laryngitis; voice altered, deep, hoarse; catarrhal phonation, as if speaking from the chest with effort; severe pressure behind the sternum. Had been thus affected for eight years past. Had been treated by various physicians in Cincinnati, Philadelphia, and New York, using inhalations of various substances, tartar emetic ointment and croton oil, at various times, without benefit, leaving the surface only dryer than before; he seldom raised anything except a few small balls of gray mucus.

From New York he was advised to go to the pine regions of the South, particularly to Florida. He spent two winters on the St. John's River, with, for the time being, some relief, but each time the trouble returned again in the North.

Through persuasion of a friend he was induced to try homœopathic treatment. Nitrate of sanguinaria, 6th trituration, was given, one grain every two hours; all hot and stimulating drinks and food were interdicted. He had, already, in one year, lost eighteen pounds in weight, and his relatives, who were all strongly opposed to his change, said he then would surely die. In one week he reported that his throat felt better, and that there was more moisture in it than there had been for two years before; there was also marked improvement in his voice. In ten days he received his third prescription: Nitrate sang., 6th, one grain dose every four hours. Improvement was now apparent to all. He was urged to take all the exercise in the open air that he felt that he could during the autumn. At the end of ten weeks he had regained six pounds of his loss, and felt stronger and better than for five years before; voice not improved in proportion: gave Causticum 6th every two hours for one week, and after-

wards Drosera 3[d]. In sixteen weeks from the time he took the first dose he reported himself a well man, and endured the winter without any unusual trouble.

CASE II.—Mrs. S——, city missionary, aged 49 years; much exposed to severe weather; daughter of one and sister of two allopathic physicians; was, by the patient I. I. B., prevailed upon to try this medicine. She had a constant hacking cough, raw, sore feeling in the throat, and sore aching and pressing behind the sternum. She was constantly exposed to the raw, cold, winter winds, which induced coryza and irritation. Her occupation required that she should talk a great deal under all conditions of exposure.

I gave her one grain doses of the 6th trituration every two hours, required her to rest a few days in the house during very stormy weather, and to avoid exposure at night. In ten days she reported herself decidedly better. She continued her occupation without further interruption, until at the end of ten weeks her recovery was complete.

CASE III.—O. W., aged 55 years; subject to frequent attacks of cold, affecting the head, throat and bronchia, and catarrhal affections.

January 20th, 1878. Contracted a severe cold from a long drive in an open buggy. This cold affected the head, throat, and lungs; felt very sore and lame all over, with copious discharge of mucus from nose; frequent sneezing; lachrymation; on 21st, soreness of throat very marked; constant tickling in the throat-pit, exciting cough, at first short and hacking, but in two days it became violent and convulsive; Bell. and Drosera seemed of but little use. On the 22d, pressure behind centre of sternum became very severe. Gave Nitrate sang. 6th every two hours. In four hours a copious perspiration made its appearance, attended with frequent sneezing. On 23d, soreness of the throat appeared in the morning after waking from a rather troubled and restless sleep; constriction of the throat, with difficult deglutition, was present; tension across the chest, which seemed to radiate from behind the sternum.

I gave the medicine every hour, and in one hour a quite free discharge from the nose set in, followed in three hours by moisture and relaxation of the constriction across the chest; the discharge was quite yellow and sweetish-tasting. This continued all day. At night he slept well, and awoke in the morning feeling quite free; but little cough or coryza during the day, and he was entirely relieved by the next morning.

The symptoms developed by this drug were brought out very promptly, and were of the most positive character. I made an attempt at proving the drug in the 30th, and also in the 6th trituration, upon my class at Pulte College, during the last winter, but without any satisfactory result. I simply give the symptoms as reported by the parties who consented to make the proving, hoping your judgment will be sufficient to determine their value and relative position in our Materia Medica.

The proving beginning on page 251, and the Clinical Report on page 254, were my own observations.

The provings by J. H. W. were made without his knowledge of the drug, though he knew that he was taking some medicinal substance.

The same is true of S. G. W., except that the prover suggested that the drug must be something very irritating.

APPENDIX.

DISCUSSION.

FIRST DAY—MORNING SESSION.

S. A. JONES, M.D., of Ann Arbor, Michigan. *Mr. President and Gentlemen:* I am sure that "*the world moves.*" In 1867 I presented to the Homœopathic Medical Society of the State of New York a somewhat similar paper, and it was ignored. That paper was only preliminary to a series which were being prepared at the instigation of Dr. W. S. Searle. The purpose of the first paper was to demonstrate that, from the power of the lenses used, neither Segin nor Mayrhofer could have seen what they claimed to have seen in their examinations of our triturations. The writer's aim was evidently deemed subversive of "the faith;" the paper was read, referred to a committee with instructions "not to publish," and then consigned to the tomb of the Capulets. Dr. Wesselhœft's paper is very differently received, and "the world *does* move."

Ehrenberg, the father of modern microscopy, has a paper *On the Limits of Vision*—Taylor's *Scientific Memoirs*, vol. i, p. 576. In it we get mathematical, not rhetorical, data for the investigation of this subject. Gold dust, in particles only $\frac{1}{1125}$th of an inch in size, are seen by the naked eye in common daylight. This is assumed as the smallest particle of gold visible to the eye. Then a particle of gold having an apparent magnitude of $\frac{1}{1125}$th of an inch is assumed as the smallest particle that can be made visible.

Now, if I understand Dr. Wesselhœft's remarks aright, *little is to be gained by going above a certain limit of amplification* in these researches. I beg leave to doubt that. You can enlarge the image formed by a 1½ inch objective to 125 diameters. You get the same-sized image with a four-tenths objective and an A eyepiece, but it contains a minuteness of detail which is not found in the equally amplified picture produced by deep eyepiecing the 1½ inch lens. The objective amplifies the object

viewed; the eyepiece enlarges the picture formed by the objective. A particle of gold which, when amplified 25 diameters, has, in the field of the microscope, an apparent size of $\frac{1}{1125}$th of an inch, really measures $\frac{1}{2812}$th of an inch. A four-tenths lens gives an amplification of 125 diameters with an A eyepiece, and a particle of gold which, when amplified 125 diameters, has, in the field of the microscope, an apparent size of $\frac{1}{1125}$th of an inch, really measures $\frac{1}{140625}$th of an inch. Therefore, the higher the power of the objective, provided the illumination is sufficient, the greater the amount of minute detail which will be presented in the field of the microscope.

[The speaker went on to remark that in such an investigation the method of illumination was all-important, and he described the apparatus employed by himself to obtain "direct illumination" with high powers,—Prof. H. L. Smith's Illuminator. By the use of this accessory, the metals Cuprum, Argentum and Aurum can each be recognized and distinguished in a preparation wherein equal parts of each have been mixed. When illuminated from the mirror of the microscope all triturated metals look alike, the particles appearing as dark specks. The advantages of "direct illumination" are as follows: The metal is distinguished from all extraneous substances, and smaller particles are rendered visible. The smallest visible particle (visible to the naked eye) of white on a black ground, or black on a white ground, measures $\frac{1}{540}$th of an inch, but a particle of gold measuring $\frac{1}{1125}$th of an inch is revealed by its metallic lustre or *gleam*.

Dr. Jones was obliged to differ with some of Dr. Wesselhœft's conclusions *as expressed in the synopsis read by him*, and if that gentleman had not employed the same or a similar method of "direct illumination," Dr. J. deemed his objections strengthened.

In closing, the speaker referred to the effect of his own investigations upon his previous opinions as to the practical value of triturations and attenuations.]

When I began practice it was with a pocket (?) case containing forty-five six-drachm vials, and everything else in proportion. I used no remedy "higher" than the third decimal. I never was and never will be known as a "high dilutionist," and I wish to state this distinctly, in order to emphasize the result upon my mind of such work as I did with the microscope in this field. I have never been able to find microscopical evidence—to *see the metal*—in anything beyond the fifth decimal trituration; still, as a man who has been a "low dilutionist" to the backbone, who investigated this subject to discern the truth fearlessly, so far as my convictions were concerned, I will say

that the very research by means of which I had both hoped and expected to be able to disprove dynamization compelled me to feel it necessary to appeal to the "clinical test." Certain optical phenomena witnessed in the triturations compelled this.

I trust I am duly sensible of the many sources of fallacy which surround the application of the "clinical test;" but if a man gives me a number of cases having the "indications" for Platina, and if the 30th of Platina has "acted" for him as the 3d or the 1st of Platina has "acted" for me, I do not understand how it is possible to doubt that the same *thing* which did the work for me in the 1st did it for my fellow-physician in the 30th, even though I cannot see *it* with the microscope. That I *cannot* see it with the microscope proves nothing; and if matter and force are inseparable, the *action* of the latter necessitating the *presence* of the former, the demonstration with an instrument which gives positive evidence takes precedence of all that which can afford only negative testimony.

Dr. F. R. McManus, of Baltimore, Md.: I wish to say a few words concerning Platina. I have been practicing for forty-one years, and although I never used Platina in any other than the thirtieth potency, yet I can honestly say that it never failed me once, not once; it is true that I never used it as a medicine in a multiplicity of cases, but in certain conditions of uterine hæmorrhage I rely upon it as much as upon any medicine in the Materia Medica. I have left patients, feeling perfectly secure in the belief that the particle of Platina possessed the requisite medical efficacy when taken, as I was in the habit of giving it, dissolved in twelve tablespoonfuls of water, a spoonful to be given every hour, with directions to cease its administration as soon as there was any improvement.

I used the thirtieth dilution. I have never used the triturations of this medicine, nor in fact of any other. I do not assert that the physician who uses the third trituration or the twelfth attenuation will not meet with the success that I have had in using my preparations, but I wish to say, that so far as my veracity can be depended upon and my sharp scrutiny as to the action of medicine, that in the use of the thirtieth I have never failed, though I have used it in a number of these cases. The two-thousandth, or the ten-thousandth, or the fifth or sixth might have done as well.

Dr. Jones: I think Dr. McManus has misunderstood me. When I referred to the thirtieth I had it in mind that so long as the same result follows the administration of the thirtieth as of the third the rational conclusion must be that both are equally efficacious.

DR. H. N. GUERNSEY, of Philadelphia: *Mr. President and Gentlemen:* I have listened with much interest to Dr. Wesselhœft's remarks upon microscopical examinations of the triturations. It demonstrates beautifully what the human mind can accomplish by nice habits of thought and careful observation. The Doctor has illustrated his subject finely, and I should not have said a word had he not appealed to my faith in speaking of a pathogenesis obtained from triturations treated in the manner spoken of.

When we can observe the pathogenetic effects obtained from so great a variety of so-called insoluble substances, and when we have them so carefully recorded, and when in so many thousands of cases these substances have been successfully applied in the treatment of disease, how can any one longer doubt the usefulness of the pathogenesis obtained from the dilution of insoluble substances? It is well known that the constant dropping of water will wear away the hardest rock, although it may take years to accomplish it. Now, you may triturate substances for a few hours and see no difference in the size of the particles, but this does not prove that there has been no subdivision of matter. The fact that water will thus affect solid granite proves to me that there is some change made by trituration, and also by succussion, or by the action of water on the triturated substances.

What gives us the medicinal force of Ergot? Is it the material itself or the *force* that is in the material? What constitutes the medicinal quality of Gold? I reason from above downward, the Doctor from below upwards. From Divinity itself proceeds a force that in after ages ultimates itself by causing matter to assume the form that we call gold; the inherent quality of that gold is something peculiar to itself, and without it the matter could not assume its form. Now we triturate the gold, and in so doing evolve the force which is also the medicinal quality of the material. Is it not the dynamical germ in the acorn and not the acorn itself that produces the oak? The acorn is but the crude material; it is the life-force within the acorn that causes the sprout to develop when placed under favorable circumstances.

I mark well the pathogenesis of gold, and when I have a disease manifesting the same train of symptoms that I find in that pathogenesis I give the gold and the disease vanishes. This holds true not alone in one but in thousands of cases, in the experience of Hahnemann, Bœnninghausen, Hering, Lippe, Raue, Dunham, Wm. E. Payne and others. All over the world we see such bright examples, and whenever we follow the same plan and prescribe according to the homœopathic law we attain the same brilliant results as do and did these men.

DR. S. R. BECKWITH, of Cincinnati: *Mr. President and Ladies and Gentlemen:* The finer the bolt the finer the flour is an accepted rule, and it holds good in the attrition of metallic substances; and this evidence comes from an almost undoubted source in the homœopathic ranks in this country, from physical evidence, which is the best in the world.

Now with all the aids of science we cannot see any medicine in triturations beyond a certain common point. Now, in my opinion, Dr. Jones's assertion neither contradicts nor affirms, nor has it any particular influence upon Dr. Wesselhœft's statement that there is no decrease in the size of matter by triturating it above the first trituration, and rubbing it upon a plate-glass will do as well as the first trituration. We all understand our usual mode of preparing medicine, and this question therefore arises: Have we, when we have got above a certain point, been dwelling in the land of speculation, and not dealing, as we thought, in realities?

I think the time has come when every one believes that there can be no especial result or force without the existence of matter in some divided or subdivided form, and if this matter cannot be divided beyond a certain point, then it follows that what we have considered force was imaginary force: this is the argument advanced here to-day. Is it true that we have been dealing in shadows, or is the microscope at fault? Here, to my mind, rests the principle of our practice. If our friend from Boston by any means disproves that which we have always considered a fact, that trituration subdivides and thus increases the force of matter, if that be false, why then are we here? Have we been wandering in the wild fields of speculation and imagination all our lives? It is difficult to know when we cure and when we fail. My friend, Dr. Dake, says patients usually get well in any case. What we considered a fact has been demonstrated to be a fiction. While you can assert that the thirtieth potency of a drug cured a disease, there is no proof whatever, for who can tell whether a cure is natural or the result of a change of condition, which condition has never been explained? I believe we cure our patients, and I can multiply testimony to that effect; but here is a whole army of men who deny the cures. Now where is the evidence? What is to be done in this case? Our only method of determining the truth of these premises is to test the correctness of our friend's microscope and of his eye. We know there is no defect in his integrity, and if there is none in his physical condition then all our pet theories are exploded.

DR. MCMANUS, of Baltimore: My distinguished friend, Dr. Beckwith, speaks about the difficulty of knowing when a man cures a case, and whether what he administers to a patient ef-

fects a cure. Now I have never been what is considered a very high potentist, my highest being the thirtieth, but some years ago, when I heard of physicians giving the two-hundredth and the two-thousandth attenuation, I had a medical friend, a member of this Institute, in whose judgment I had considerable confidence, and as I wanted a reliable opinion upon the possibility of high attenuations producing any effect in disease, I asked my friend his opinion and experience regarding it. In reply he narrated one case, as follows: "I had an ulcerated tibia to treat, for which the patient had for five years tried a variety of ointments, salves, etc., and yet it did not get well, and he thought he would try, in his own way, homœopathy; so he took Sulphur in a low dilution or trituration, thinking that the most efficacious remedy. It did no good. Some two months later he took the thirtieth. Several months afterward a friend of his told me about the case, stating all the peculiar symptoms. I gave him one dose of my Sulphur 2^m, which he said he took, never thinking anything more about his leg. He did not take another dose of medicine, for in six weeks the leg was cured. I don't say that the last remedy cured it. You can draw your own inference, and I only give you my opinion."

DR. J. P. DAKE, of Nashville, Tenn.: Mr. President, it is not my purpose to detain the Institute for any length of time but I wish to correct what I think must be a misunderstanding. We are not so far apart as we might be, judging from some remarks made here.

There are different varieties of the proof of the presence and power of medicine. In the first place there is the physical demonstration, the taste, sight, and smell, by which to distinguish medicines. We have heard this morning of the use of the microscope, and to how limited an extent we can follow with it the presence of medicine.

I have made instruments with which my friend Dr. W. H. Winslow, who is present, examined triturations under the microscope, to determine the question as to the inequality in size of the particles of drug-matter in the different triturations. Now, gentlemen, we have the microscope, and we have the spectroscope, and there are beyond these, the evidences of analogy.

There is in our country an influence that causes people to be very sick: it is called malaria. Have we ever tasted it? Have we ever smelled it? Have we ever seen it with the microscope, ever traced it? And yet who denies its deadly power?

Leaving this kind of evidence, there is still the other, already mentioned here, of clinical experience; this we cannot afford to

throw aside. Now, when all these evidences are gathered, we must acknowledge that it is possible that medicine can be carried up even into the thousands. I am unable to follow up there. I have given medicine beginning with the thirtieth, because that was where Hahnemann stood. I had to take somebody's experience, so I took his, beginning there. I have used both higher and lower, but I must say that I have not the least particle of belief that there is any power in medicine actually available or useful where there is no medicinal matter.

DR. S. R. BECKWITH: Repeat that.

DR. DAKE: I say I have no confidence or belief whatever in the power of medicine without medicinal matter. When that limit is passed the spirit is intangible; you cannot handle or direct it; it does not act upon the human body for us so that we can make it useful. I say that disembodied spirits are of no earthly use to us. (Applause.) We are acting on the material tissues of the human body, and must have matter, which is the body, the spirit or soul of force.

The discussion on the papers of this bureau was then discontinued, it being understood that a Sectional Meeting of the bureau would be held in the afternoon, at 4 o'clock, all members being invited to attend.

SECTIONAL MEETING OF THE BUREAU.

THIS meeting was called to order at 4 o'clock on the afternoon of Tuesday, by the chairman of the bureau, DR. C. WESSELHŒFT, of Boston.

THE CHAIRMAN: As Chairman of the Bureau of Materia Medica, I have been requested to call this meeting, in order to continue the discussion of the morning. Remarks are now in order.

DR. T. L. BROWN, of Binghamton, N. Y.: *Mr. Chairman, Ladies and Gentlemen:* The very interesting discussion of the morning between two men who scientifically undertook to decide by observation as to the limit of the subdivision of particles, has led us to think that we may perhaps yet have something to learn. I merely wish to express my own opinion, contradicting no one. I am simply a member of this Institute who had a word to say this morning, but gave way in favor of gentlemen who said better things.

Now, all will acknowledge that matter exists in invisible forms.

Next there is the great attribute of matter which we call motion; and following that, in order to show matter in any form, there must be contact. We cannot conceive of new matter that is other than a new arrangement of old matter, nor of new form, that is not made up of some form already known. As our duties as physicians lead us to determine diseased and healthy forms of body, this discussion must for the most part be upon those forms of matter we call remedies, which produce a healthy form of body.

Matter and motion are inseparable; this is illustrated in the vegetable and animal poisons. The animal poisons are more diluted than any of the metallic triturations that we use. It is doubtful if in the higher dilutions we know where we are; but even then the highest dilutions are less attenuated than is the poison of a bee-sting. All must be matter and its motion; this motion, when out of place, produces disease, changing the form that supplies the function. Now, if we find we cannot carry the trituration of metals beyond a certain point, so far as the sense of sight is concerned, if, for instance, we cannot carry it and test it beyond the fifth trituration, yet when we dilute it it still retains power. We have a particle of platinum, which is changed into a dilution; this still retains a certain form, it still has motion, and we must acknowledge that when taken into the system it comes in contact with the pabulum which produces the blood-cells, and acting thus on the blood produces changes in it that can be seen and tested. We have results from the contact after the use of remedies. All this leads to certain definite conditions; they produce matter, form, and motion, and these in turn produce the changes of disease or of health. In one case we want to destroy, in the other to build up, and as physicians we must understand this fact in order to be successful.

Some call this power dynamic or spiritual, others hold different views.

Cannot we agree on these things?

I do not wish to introduce any religious discussion, but I use terms as they are used by men to describe ideas. It is distinctly said in the Good Book that God is a Spirit. While we cannot understand all its attributes, we can understand the definition of the word. In Chambers's *Etymological Dictionary* a spirit is defined to be a breath, a breath is defined as a vapor; steam is also called a vapor; it is also called a gas, and a gas is also called a ghost, while again a ghost is called a spirit. Now, what idea can we infer from these words in daily use? These definitions are the best any one can give, and I shall use them in this dis-

cussion. If we reason from the smallest, it will lead us into the dilutions; if from the largest, it will lead us to substances similar to those used to-day in allopathic practice. We shall have substances large or substances small, but shall yet have to do with matter and with form.

We have it in the shapes that suit both the high and the low dilutionist, and each from his standpoint will declare himself the best authority, especially in those disease-forms by which he can make himself a most intelligent physician in prescribing.

We have had this explained by our venerable friend, Dr. Guernsey, whom I respect as much as any member of the Institute.

He speaks of the wearing away of the rock by the dropping of water. Who of us can explain the strength or amount that is worn away with each drop?

The rock wears away, it goes off in a dilution, but how fine this dilution is we never know; still the rock is in time worn and gone.

Because we cannot explain it, because we do not know what takes place, we should not be dictatorial to each other about it nor dispute it.

I am neither a high nor low dilutionist, but wish to accept the best of both systems. I come not to instruct but to be instructed. None of us know what a spirit is; many hold opinions differing from mine. Neither do we know what medicines can do. There is a limit to our knowledge to-day; we can increase its amount to-morrow, but to-morrow there will still be a limit; and yet if we progress, the morrow will bring a knowledge unknown to-day. I trust some one will make this subject still plainer.

Dr. McManus: You say motion is connected and occurs with all bodies, even nature's lowest forms. Do you believe that motion is unlimited?

Dr. Brown: I do, sir, but cannot explain it.

Dr. McManus: Gold does not change its form through mechanical influence.

Dr. Brown: It changes, but we do not perceive it.

Dr. McManus: Can you produce a proof of it?

Dr. Brown: Some other form of matter produces the change.

Dr. McManus: The natural structure of a piece of solid gold is not subject to continual change.

Dr. Brown: Not that we are conscious of.

Dr. McManus: You cannot decide if there is motion in a solid form.

Dr. Brown: There may be insensible motion; we know that

gold will change, and that it will so change as to be invisible, and yet it may and does exist; it is not destroyed but simply put out of sight. We cannot go behind our common sense.

DR. MCMANUS: If I rub my finger thus, is it not motion?

DR. BROWN: Certainly. That would be an exemplification of various kinds of matter-motion.

DR. MCMANUS: What do you think takes place between the molecules composing the piece of solid gold?

DR. BROWN: I do not know. But everything is in motion. This gold ring is only relatively in motion with regard to my finger, when I put it on and take it off, but the molecules within it change constantly, although we do not understand this change.

DR. MCMANUS: I think I understand you.

DR. BROWN: Very well. You and I know that there is a continual something that we call motion taking place; we may better understand this in the future, but all motion must be relative to matter. Matter will not produce motion; there can be no result without a cause; thus it reaches the primary statement of form and motion.

DR. A. KORNDŒRFER, of Philadelphia: I wish to ask Dr. Wesselhœft what he said relating to Mercury when triturated with sugar of milk, in making his preparation, as I did not understand the statement.

DR. WESSELHŒFT: Were the paper not so long I should be glad to re-read it. I stated that Mercury can be so triturated that some particles will be coarse and others fine, and this can be tested by microscopic examination.

In its original form, it is impossible to distinguish the particles beyond a certain size. For instance, you rub a small globule of Mercury, placed in a watch-glass, and to which a minute drop of Canada balsam is added, with a hard body, as the round end of a glass rod, for a minute. This reduces the particles each to the three-thousandth part of a millimeter in size.

DR. KORNDŒRFER: Did the Mercury seem always the one size and form, and that the smallest, under all circumstances?

DR. WESSELHŒFT: The particles were so uniform as to thus strike the eye.

DR. KORNDŒRFER: This answers my question. About two years ago it occurred to me that there was a possibility of our having foreign metals in our triturations. I thought this might be the case from the fact that often our triturations were not clean. I thought they should be made by machinery.

This had been attempted, but the attempts to purify had often failed to work properly, owing to the friction from the mortar. That is, taking, for instance, the triturations of Mercury or Ar-

senic, we had the iron metal, dust, etc., to render the preparation impure.

Fearing that this was a great detriment to success, I studied the different forms of mechanical contrivance, in order to see how a thorough trituration might be obtained without any admixture of dirt or of any foreign metal. I devised such a machine, and was told that Mercury was the most troublesome substance to triturate evenly, as the particles constantly reunited, thus preventing a fine trituration, unless it was continued for four hours with the sugar of milk. My machine had two pestles working in one mortar, the pestles being held firmly by a stationary hand; the motion, without friction, was from the mortar. The whole thing was enveloped in some substance to exclude the dust. The mortar revolved in one direction, the pestles remaining quiet. With this apparatus I could thoroughly triturate whatever substances I used.

I started it in the machine shop where it was partially constructed, and undertook to triturate Mercury.

I took a half ounce, having a large vessel of about fourteen inches diameter, and I took a two and a half-inch pestle and a mortar of thirteen inches in diameter. I triturated fifty-five minutes by the clock, then took a sample from the mixed portion and again triturated the remainder, after bringing it to the next trituration, for one hour, making one hour and fifty-five minutes.

I took a half ounce bottle of this trituration, and called with it on my friend Dr. Hering next day. He was interested, believing that a good trituration could be made by machinery.

The doctor has one of Zendtmeyer's finest and highest power microscopes. I placed the first, the fifty-five minute trituration, on a slide, by dusting the powder on the slide and dropping it off; I then placed the cover-glass on, and putting this under the microscope, Mr. Coates, who has considerable reputation in Philadelphia, made a drawing of the microscopical appearance of this first trituration of mercury. I tried a number of samples, selecting from the different triturations, and examining each carefully. There were five physicians present, with Mr. Coates. We found the particles almost unvarying throughout all the specimens. I did not measure the size.

Dr. Wesselhœft: It was triturated with the sugar of milk?

Dr. Korndœrfer: I speak of that method as our regular test, required for distinction; we always follow that method of preparation. The particles were of an almost regular size throughout. After a fifty-five minute trituration we found the specimen to be so subdivided as to render it difficult to distinguish it

at first sight; but it is necessary to become accustomed to the microscope in order to use it successfully. We had a very fine instrument. I have used the microscope for many years. In the Mercury that was triturated for an hour and fifty-five minutes the particles appeared only as the smallest dots, under one of Zendtmeyer's highest power instruments.

Dr. Hering sent to Zendtmeyer and ordered the highest possible objective for his microscope.

DR. WESSELHŒFT: I should think a test of that kind very unsafe. I would not like to use such a power.

DR. KORNDŒRFER: We then continued our experiments further. I examined the preparations suspended in distilled water and found the globules of Mercury remained of the same size.

DR. MCMANUS. They were suspended in water?

DR. KORNDŒRFER: Yes, and that examination developed no motion between the particles. The Mercury had lost its specific gravity, I think, but we did not measure whether it had or not.

The surface between the glasses was not much larger than the Mercury; the glasses were pressed very closely together. It may not have been suspended, and there could be no gravitation, there being no perceptible depth.

If there had been depth it must have passed out of the focus, and thus the test could not with any certainty have been applied. I will show the drawings to any one who wishes to see them.

DR. WESSELHŒFT: How would you distinguish between the wet and dry particles?

DR. KORNDŒRFER: I cannot say, but they are easily distinguishable.

DR. MCMANUS: You did not carry your experiments to any higher attenuation?

DR. KORNDŒRFER: Not any farther than as I have just explained to you.

Dr. Wesselhœft speaks of filtering. It occurred to me that there was possibly an error in that very process. I do not know his process, but a good filter must have porosity, and by this porosity we should lose the finer particles.

I thought Dr. Wesselhœft might have carried his porosity on a little different line from ours, in estimating what remained in the filter. The fine particles would be carried away. I would suggest that it would be preferable if we could make a dilution or a solution of the entire quantity. Having triturated fifty grains of sugar of milk and half a grain of gold, reserve half that preparation, and have the other half evaporated in a vacuum; when the residue could be examined microscopically.

By this means we could gain positive knowledge as to the ex-

istence of the finer particles. But unless the filter was capable of allowing these finer particles to pass through, there would not be a correct result.

Dr. Ludlam was called upon.

DR. R. LUDLAM: I should like to call on my friend Dr. Barnes, of Ohio, who will make my speech for me.

DR. BARNES: I hardly understand the discussion well enough to enter into its spirit, not having been present this forenoon. I have simply heard that it was a very interesting discussion on Materia Medica, but I do not know what was said.

I understood somewhat of the speeches this afternoon. I think some of the speakers did not understand much more than half they said. The principal point of difference between matter and spirit I have little to say upon, as I have a paper which I suppose I am to read before this Convention, in which I have discussed this subject.

It seems to me that the real question is begged on one side and perhaps on both, in this discussion. No doubt all medicinal substances, even of drugs, are material substances, are matter. But are they anything more? My good friend here says they are in motion. I admit that there is motion in them, else motion could not come out of them and they would be of no use in the body. There is a certain motion taking place all through the body. I admit that in the gold ring spoken of there may be a motion; it may be so fine as to be invisible to the finest instrument, but it is there. But the question arises, what is and what produces motion? My friend here says that it is a part of and results from matter. Now that is a question that should be decided and which I think is begged.

Motion may arise from entirely different origins, and for all we know, there may be motion in the substance, and the motion may be entirely different from that of matter as generally understood.

They may so differ that they may have scarcely anything in common, and motion may result from some other substance, as a cause, working down into the material substance and showing its presence in that way. That may be true for anything that science can prove to the contrary. If the fact is brought up here that matter is in motion, I have no right to assume that the motion originates in the matter at all.

This question must first be clearly proven, and yet it is a matter that science may never be able to determine. I privately believe that all motion is of a spiritual origin, but I cannot prove this by science; you may call it speculation, if you please, for it is speculation.

I may have evidence of another question at the same time, but if I undertake to prove it by science, by your microscope, or by any other scope, I shall fail; such result cannot be gotten out of science.

It would be like trying to find the spirit of a man by getting him on a table and cutting him up. The great question is, is there any spirit about that man separate from his material body, and can you prove this by science?

Can you cut off the muscle, divide the nerve, and apply your microscope, and see if a soul is there?

You know that whether there is a soul there or not, it cannot be discovered by such a process, for it had gone doubtless before you commenced cutting. But because you do not find it there, it is no proof that there was no soul during life.

DR. BROWN: I would like to ask the doctor of what his view of a spirit consists?

DR. BARNES: I can simply give my opinion. I think it is a something of the same nature as thought. If you will define of what substance thought is, I will tell you what kind of substance is spirit.

DR. BROWN: Is there no distinction between soul and spirit?

DR. BARNES: There is not. I use the terms synonymously. We have only natural terms to define either in. You can talk of God, but have only the natural word to speak. What does the word "God" mean? Taken from the *Theos* of the Greek, the *Deus* of the Latin, or the Hebrew word for God, and the word means simply *the open sky*. Why do you not get a word to express your idea of a Supreme Being? You are in a material world and limited to a natural language; your mind will rise to no higher term.

Out of this word you must conceive an idea a little broader, a little higher, than this simple expanse of the natural heavens.

Now, if you will permit me, I will make a few remarks on the improvements in and reliability of our Materia Medica.

It is the most important thing in all the range of medicine.

We treat our diseases according to the knowledge learned from the Materia Medica, and we ought to know more about that than about all other branches in the science of medicine.

While that alone would be useless, so would all else without it.

We should understand Materia Medica thoroughly, and yet there is not in our Materia Medica a correct description of what drugs are.

There may be some who pick out from our Materia Medica by an instinct, looking through and through it, but I cannot.

I must have evidence. How was it made, and why was it so begun?

There are many more volumes than I could carry in my arms, and yet we are expected to study these volumes, to understand and remember their contents when we enter the sick-room. We cannot remember it, it is too extensive, so we must select and prescribe from our limited knowledge.

Now, why are these books so verbose? We have what we call provings. Here are a dozen men, or fifty, or a hundred, who take a certain substance, recording the symptoms. Every ache or pain or imaginary bad feeling is carefully noted. There may be fifty or there may be ten thousand symptoms, and these are strung together, and we call the collection a proving.

There may be a dozen who in proving recorded a pain in the head; one describes it as a *headache*, another as *a pain along the side of the head*, another as though his head would burst, one in this, another in that way, and yet it is the same pain exactly. There are no two who will put it in the same language, yet we are to understand all that these men so imperfectly describe, and are expected to prescribe from such data. We men of ordinary minds do not know how to comprehend so very much.

It is lamentable, but I see no way but to throw away the books.

I undertook to condense the Materia Medica by only saying a thing once. If, for instance, a dozen men described a headache, I simply selected the term that expressed a headache, and only use that term once; then I knew what I had, and that I should not find it anywhere else. I thus went through page after page, and how much do you think there was left? I published an article on Arsenicum in a Cleveland paper with these culled symptoms, and the result was astonishing.

Another weak point in our provings is the fact that we take alcoholic tinctures or dilutions, and we must get the alcoholic symptoms. If we take the same amount of alcohol clear, we get symptoms through body and mind. How many of such symptoms are mixed up in our provings.

Impurities may get into our triturations with sugar of milk. Then we prove substances comparatively inert, and who knows how many symptoms one can get from sugar of milk? Some of our friends have found in the one hundred thousandth trituration of dog's milk one of the most astonishing agents among us, and if there be such power in bitch's milk, who knows but there is some power in cow's milk if triturated long enough.

Dr. H. C. Allen, of Detroit, Mich.: I would like to ask the

doctor, as he has objected to our Materia Medica, to give his plan for making one.

DR. BROWN: Why does the gentleman believe in or practice homœopathy?

DR. BARNES: I am a homœopathist probably from the same reason that led Hahnemann to discover our law of cure. He found by experience that medicine given according to the symptoms would cure a disease, and he studied and founded his system as the fruit of that experience. I found by my experience that when I gave medicine according to the law of similars and my knowledge of the nature of the medicine and its ability to cure, that the cure was wrought. That is how I was converted to homœopathy.

DR. BROWN: There is virtue in the Materia Medica, then, after all?

DR. BARNES: Certainly, certainly; it contains much of usefulness. I have discovered more than half a dozen good things in it myself during the last twenty years.

DR. BROWN: I have been spending eleven months studying Materia Medica, and within six months I think I have found light on the subject.

DR. T. MOORE, of Germantown, Pa.: Mr. President and Gentlemen: I was very glad to have heard the report of Dr. Wesselhœft, and I hoped it would settle the material part of the subject under discussion. He told us that by ocular inspection he detected particles of the material triturated, and in how high a trituration the most powerful microscope revealed the drug particles. Those who are satisfied only with the curative power of the material dose, must certainly be contented with the result of Dr. Wesselhœft's investigation. But there is a higher, a far more interesting and delicate test of the action of medicine than the human eye, even when aided by the microscope, and that test is found in the diseased, and consequently susceptible, human system. This is a broad subject; upon it rests all the misunderstanding and difference of opinion in our school. Could this one question be satisfactorily settled, it would result in complete unity and harmony.

We must admit that drugs cure disease by virtue of their inherent medicinal properties or medicinal force. We know that matter is indestructible, and that force is dependent upon matter, being its inseparable attribute.

We know that all the great natural forces exert their powers and effects without any appearance of appreciable matter, which we never have detected nor can detect.

The light which comes to us from the sun, ninety-two and a

half millions of miles away, brings an appreciable condition and influence.

We know that iron and sodium are found in the light coming from stars millions and millions of miles from this earth, and yet what is the size, or weight, or form of the molecules of matter that come to us in this way? In my opinion, one great test should be the susceptibility of the diseased system to the curative power of drugs, their curative effect upon the human system, and in any disease to which the system is susceptible. We observe the effects of the light from the sun, which comes a great distance; and so, too, we see the effects of drugs no matter how high the attenuation or how low, provided we select the proper remedy. The question to determine is, whether the curative power is dependent only on material substance, or on material substance with its material principle or property or force. I would say more, but this subject is treated of in my paper.

DRS. R. LUDLAM, C. PEARSON, T. F. POMEROY, H. N. GUERNSEY, WM. GALLUPE, and L. E. OBER, were invited to speak, but declined.

DR. WESSELHŒFT: At the request of Dr. Allen, I would say that the point of the argument in my paper was merely that the theory of solubility after progressive trituration is merely an assumption; that facts prove that we have no right to assume such a theory; and in corroboration of this a number of instances were adduced in which metals and minerals were proved not to have been reduced to an extreme state of subdivision by the methods in use.

It was stated that simply grinding the charcoal in its natural state for a very few minutes would reduce it to a finer state, and that this applied to sugar of milk and mercury. This is my line of argument. I wish to hear from others.

All that I can possibly hope for is to induce others to take up this line of investigation, but in more ingenious ways. I am not very ingenious, but have spent weeks studying this problem, that some might solve in a few minutes. I would like an expression of opinion regarding it, so that we can have a complete statement of views, and so that I can correct a few of the statements already made.

DR. BECKWITH: In the absence of any one to speak, I wish to offer the following resolution. If the local societies of our country have established standards for their guidance in practice, being set up in different regions they must be somewhat dissimilar. This body should establish a standard for its own guidance, and that should be the recognized standard for the country, whatever auxiliary societies might do; and it is pos-

sible that, in an event of that kind, much unfortunate discussion and slurs that have been thrown out against us might be avoided.

Resolved, That we recognize in the law of similars the only law necessary for us to follow in the practice of medicine in our prescribing for the sick, and that auxiliaries are only applicable when local changes are necessary to be produced for the purpose of accomplishing a cure.

The resolution was decided not to be in order.

DR. LEWIS SHERMAN: Mr. Chairman: I infer, from the few remarks that I have heard, that the subject under discussion has been whether trituration always produces attenuation; whether minerals and other substances are all made finer by trituration. I have made some observations in connection with my business, upon this subject.

Take Aurum, for example. I have been very careful and correct in making the lower triturations, and I have found after triturating it in the second or third decimal for an hour, that the particles, when placed under the microscope, did not seem to be reduced in size. The sugar of milk dissolved them; they looked larger, thinner, of no more weight, but broader.

The effect of trituration seems to be to reduce the substance to thin flakes, and instead of subdividing its particles, to make them larger. Cuprum is more difficult than Aurum to reduce; but Cuprum, after standing in the form of a trituration for a long time, produces a fine powder oxidized on its surface, and we have a finer trituration of black oxide of copper.

If the trituration is made originally from the precipitated metal, the whole in a short time becomes black oxide of copper. We have no Cuprum metallicum.

Plumbum, in like manner, is rapidly changed into the form of the carbonate if it is exposed to the air at all. I do not believe Aurum and Cuprum can be made any finer by trituration.

DR. BARNES: Was the trituration the second or third?

DR. SHERMAN: The first of Aurum, if properly made, can be rendered as fine as any; but almost all other insoluble substances do not possess its extreme malleability and ductility, and can be made finer.

DR. BARNES: How is it with Calcarea?

DR. SHERMAN: That is made finer by trituration.

DR. BECKWITH: From what trituration do you make your attenuations with Aurum?

DR. SHERMAN: Aurum is the most insoluble substance known to chemists. I have a paper on this subject.

On motion, Dr. Sherman then read his paper.

DR. EDWARD BAILEY, of Detroit: In speaking of breaking up particles, Dr. Sherman says, there comes a time when the par-

ticles of gold cease to be broken; if one were broken into ten thousand pieces, these pieces would cease to subdivide, and would spread out and become thinner. Now, if from the particle that has been broken into ten thousand pieces, you take the one-hundredth part and triturate it again, and so on, again and again, how shall we know when the trituration is reached that contains no gold?

DR. SHERMAN: I did not state that no attenuation was produced after we reached the third or fourth, but that it could not be carried on in that same ratio, breaking one particle into one thousand, beyond the first few attenuations.

DR. BAILEY: I understood it to cease to be broken up entirely.

DR. SHERMAN: I was unable to observe, under a microscope, that the larger particles of Cuprum and Aurum were diminished in size by continued trituration, but I believe that as a whole the particles of the sixth decimal trituration are smaller than those of the third, although the division has not been carried to such an extent that there are as many individual particles in an ounce of the sixth as in an ounce of the third.

DR. J. P. DAKE, of Nashville, Tenn.: I would like to know whether the doctor assumes it or has proof, that in the third trituration we have reached the molecule or ultimate particle of matter, and I would like to understand the proof. I think we should be extremely careful in the use of terms. Does the doctor consider particle synonymous with molecule?

DR. SHERMAN: I did not state that we reached the molecule in the third trituration; it is only by solution that we draw matter to its ultimate molecule.

DR. BROWN: I would like to ask Dr. Dake where he gets his definition of molecule?

DR. DAKE: It is the common definition.

DR. BROWN: That is the definition given to the word atom; a molecule can be divided.

DR. DAKE: The word molecule was the one used in the paper.

DR. BROWN: It is not the definition you gave, unless Dr. Sherman has the same definition. If there is no atom there can be nothing smaller than a molecule, which must be the smallest; we may not recognize the smallest portion of matter, as the term may be relative.

DR. DAKE: He should use the term particle.

DR. J. H. MCCLELLAND, of Pittsburg, Pa.: I would like to ask Dr. Sherman if his argument is intended to show that the more insoluble the agent or substance, the more medicinal, active and

powerful it is, and that in proportion to its solubility its activity as a medicine ceases?

DR. SHERMAN: That is not the main point in my argument, but with regard to certain substances producing certain effects in an insoluble form, or certain other effects in a soluble form; as, for instance, Carbonate of lime produces poisonous effects, as we all know, in an insoluble form, while the moment it becomes soluble its poisonous effects cease, while it may have some poisonous effects which are manifested in a soluble form; and thus from these insoluble substances we get different medicinal effects.

The points which I wish to emphasize are, that we must, in therapeutics, use the same medicinal preparation as was used in the proving. We have insoluble substances by which a poisonous action may be produced, and yet we find that when the same substance is dissolved, its poisonous action ceases. We have a proof of this in lead poisoning; the moment the lead is dissolved in the blood, that moment the poisonous effects of the carbonate of lead cease. We take acetate of lead in large doses without producing colic or paralysis, which we should get with smaller doses of the carbonate.

DR. B. W. JAMES, of Philadelphia: I would like to ask the doctor how far he has carried his researches as to the changes in medicines. He stated that the copper and lead became changed after standing for a year in trituration, the copper becoming an oxide and the lead a carbonate. Has he investigated the point with other than these two remedies? I wish to know which of our remedies change, and to what extent. It is important to know whether we are giving real Cuprum or the oxide; to know for how long our remedies may remain in their normal state, and how far our patients may thus be affected.

DR. SHERMAN: The only other changeable substance is Zincum metallicum, which forms Zincum oxidatum; the metallic zinc changes to a white oxide in fine powder. Neither Cuprum, Plumbum nor Zinc remain in the metallic form. The trituration of Cuprum retains its integrity the longest.

DR. ALLEN, of Detroit: At what trituration does the change in these metals commence?

DR. SHERMAN: In the first trituration; the first of metallic zinc will change to the oxide in two days. It will change in the second or in the thirtieth.

DR. ALLEN: Is there any particular trituration at which the change stops?

DR. SHERMAN: No, sir; the Zincum metallicum is not reliable; the Zincum oxidatum is the medicine of the proving.

DR. BARNES: If division extends only to the third, and beyond that there is no difference in the size of the particles, and you take a grain in bulk, the only difference is that there are fewer particles in one than in a grain of the other.

Now suppose if in the third, as far as divisible, in one grain you have ten thousand particles, how many particles would you find in a grain of the hundred thousandth?

DR. SHERMAN: You had better ask somebody else, doctor.

DR. LUDLAM: I should. It would not make a particle of difference.

DR. BARNES: If there is a limit, and if it is reached in the third, if it will not make a particle of difference, how can there be any power in the ten thousandth trituration?

DR. SHERMAN: I think that many of our triturations are obtained from dilutions.

DR. BARNES: How far can you carry divisibility in the dilutions? I understand the statement to be that neither by trituration nor by anything else, as tested by the microscope, can you go beyond a certain point. The particles of the Aurum in a dilution are of the same size in one specimen as in another; now, when that limit is reached, and you scatter the particles in the attenuation beyond that point, how many would be present in the ten thousandth? What have you got in that, or do you know you have got anything?

DR. SHERMAN: We do not get the ultimate molecule until the substance is dissolved; by trituration the ultimate molecule cannot be reached. When the substance assumes a liquid form its molecules are liberated.

DR. BARNES: Have you any evidence of that?

DR. SHERMAN: Yes, we have.

DR. BARNES: Can you find it by the microscope?

DR. SHERMAN: No; that is not the evidence.

DR. BARNES: I would like to ask Dr. Sherman if he has been a practicing physician?

DR. SHERMAN: Yes, sir; for eight years.

DR. BARNES: Have you any less confidence in the preparations made from insoluble substances than you had ten years ago; that is in the cure of disease?

DR. SHERMAN: No, sir. The results of my observations and reasoning would give me more confidence in those dilutions.

DR. H. N. GUERNSEY: In curing the sick?

DR. SHERMAN: These cures must be the effects produced by the medicine dissolved or not dissolved, insoluble or not. I have no less confidence in the law of cure. We cannot expect the

same results from the administration of a dissolved substance as from its use in an insoluble form.

DR. H. N. GUERNSEY, of Philadelphia: It makes no difference about the indivisibility of matter. So long as these gentlemen retain confidence in their remedies, I am satisfied.

For thirty years I have been associated with such men as Hering, Lippe, Raue and others, in Philadelphia, and we use to-day, as we used twenty years ago, the highest potencies we can find, and our cures are remarkable. No matter what you take, be it diphtheria, hæmorrhage, anything, the most violent and rapid disease, give me what we claim as the hundred thousandth potency and I will use it; those who practice in my way will use it; there is no difficulty; all can cure with this potency quickly and nicely. I have repeatedly stopped uterine hæmorrhage where others had been giving medicine without any effect whatever. I have given the hundred thousandth potency, and in a short time the patient was better, in a few days perfectly well, and all accomplished with the single dose.

The same rule applies in other diseases. I have proved it, and you can all do it, if you give the thing a fair trial.

About twenty-eight years ago I attended a meeting of this Institute. I was then loaded down with drugs, tinctures and crude medicines. I was laboring hard to cure my patients. At this meeting a gentleman reported a case of diphtheria cured with a high potency. At that time some of the best men in our profession were using high potencies. This case struck me forcibly, and I asked myself, does that man lie? I began to investigate, and from that day to this have not used a crude substance, but have sought to get a curative principle out of the crude drug and to discard the rest. This active principle is held by the attraction of cohesion. Set the active force at liberty and we obtain the curative results by applying this active principle according to the teachings of Hahnemann.

DR. H. C. ALLEN, of Detroit, Mich.: I wish to reply to Dr. Barnes. I respect the gentleman's opinion, learning and ability, but I think he is in error in explaining his idea of how our Materia Medica is formed. The doctor says a certain number of men take one drug and record all the symptoms produced, and hence our voluminous Materia Medica.

Now I understand that these men have for sufficient cause made a record of such symptoms as they did not have before they took the drug.

Ten years ago I thought that these volumes of symptoms were nothing more than sheer moonshine, and that not a tenth part of

them were needed. Now I find that there are a very great many reliable symptoms. I have verified them again and again.

DR. BARNES: The gentleman does not state my position correctly. I did not mean to call the whole Materia Medica a mass of unreliable symptoms. I merely wished to show the great degree of uncertainty existing. I believe, however, that enough to answer a good purpose is certain.

DR. ALLEN: We have many minds and many provers. Each drug does not always affect the system in the same way, and hence there is a variety of symptoms from the same drug. Now I think many of us altogether overlook the mental symptoms of our Materia Medica. Some of my best cures have resulted from paying attention to these symptoms.

An attempt has been made to prove that when we pass the point where the microscope detects the molecules of crude drugs we reach a point where medicine ceases to act. Now, it is not a question of reason or theory, but a question of fact. Credible witnesses claim nice cures with the higher dilutions; others claim the same results from the lower preparations. Hahnemann told us to prove these things, not to theorize. He began low but ended high; you will do likewise.

It is not a question whether we can reason it out, but whether after our experiments we can demonstrate the position. I believe with Dr. Guernsey, that some of the finest cures made are made with high potencies. All have not Dr. Guernsey's ability. He has devoted many years to his peculiar study of the Materia Medica. A few years ago I would have scorned to carry a repertory in my pocket, and thought myself able to get along without it at the bedside. I thought my patients would have lost confidence in me if I referred to a book. Now I think there are none too many books on Materia Medica. Our journals have lately been filled with discussions on this question of high and low dilutions, and of the possibility of reaching a harmonizing medium. There is but one way to accomplish this, and that is by experimentation.

You can never theorize the ten-thousandth potency, nor can you cure with it without trying. Still, do not use it on faith because I have used it.

DR. B. W. JAMES, of Philadelphia: I wish to say one word regarding the purity of our medicines. Dr. Sherman's experiments, conducted no doubt carefully, prove that certain remedies change after standing, so that although I give metallic copper now, a year hence if I use the same preparation I give the suboxide of copper. Other remedies beside those mentioned by Dr. Sherman may also be changeable. In view of this ought we not

to have some standard of preparation of such remedies, so that they shall continue in the same form for any length of time? The old school are more careful than we are regarding certain medicines.

Probably some of our older practitioners have been using from the same trituration for thirty years, and who can say that they are now using the original remedy? This seems a vital point, and should be determined by an expert.

DR. J. G. GILCHRIST, of Detroit: As to the gentleman's remark in reference to remedial action in the different attenuations, I think most present will support me when I say that I have the evidence of Grauvogl and some others who mention unlike actions in the high and low preparations.

Dr. Sherman has given his evidence; others tell us of other ways. I rather like my friend Dr. Brown's ideas; he can indicate a material unit, but an atom is more than that, it is chemical. We first have the atom or molecule, whether as a drug or not; we cannot explain how but we know that gold is decomposed by heat, other substances by air. We then have essence, and beyond that a something, which you may call a remedy, but there is a force and it is gold, be it in the fourth or in the forty-thousandth.

Fifteen years ago Dr. Guernsey told me something in reference to a case, and I never shall forget the words: "I wish you would see it as certainly as I." Many a patient has reason to be thankful that I then met Dr. Guernsey. When I attempt to cure a case of intermittent fever or any other disease, I think of his saying: "You can cure that case if you will but forget the disease and treat the patient according to the symptoms."

DR. T. F. POMEROY, of Detroit: *Mr. Chairman:* I wish to say one word about the changeableness of some medicines. For twenty-five years I have used the remedies that I then bought in the centesimal dilution, the highest used at that time. I see no difference in the results obtained now from those when my medicines were fresh. I can understand the chairman's paper, but fail to follow all the philosophy of this discussion.

DR. SHERMAN: Probably the doctor has been using, for instance, copper in the suboxide for a long time; he will obtain different results in the way of cure when he gets a fresh preparation.

DR. POMEROY: I get the same results as I did twenty-five years ago with the same medicines.

DR. B. W. JAMES: The doctor does not know that he had the real Cuprum when he first bought it; it might have been lying in the drug-store for a year. Did he not use the suboxide when he thought he was using copper?

DR. LUDLAM: Evidently it makes not one particle of difference.

DR. F. R. MCMANUS, of Baltimore: *Gentlemen:* I am no expert in dilutions or attenuations, but I think both high and low dilutionists effect cures. I have frequently noticed in cases reported in our journals that some men give a dose of medicine every half hour, every hour, or two hours, or even every fifteen minutes, and sometimes they give not one medicine but a number in rapid alternation. I never saw Dr. Guernsey prescribe, but I know that he makes one dose suffice. I may perhaps cure one-third or one-half of my acute diseases with a solitary dose of my usual preparation, the thirtieth, which I may follow up at intervals with placebos.

Now it is a direful misfortune that the alternators, because they do not succeed with high potencies, pronounce them worthless. They do not use them correctly. The greatest enemy to the homœopathic physician is oftentimes himself.

I could not practice medicine as some men practice it, who, being called to a case where aconite, or belladonna, or bryonia is indicated, give all three medicines.

Such a man admits his want of faith in his medicines, for if he knew one remedy to be indicated, why give the others? Let him give *one dose* of the aconite, and if more doses are to be given, let him give a dose of the solution or trituration of saccharum lactis in water, every one or two hours. I was once consulted by a lady who complained of rheumatism of the arm; after a careful examination of her symptoms I decided pulsatilla or mercurius to be the remedy, and felt that one dose would cure her. I did not know which medicine to give, and so I gave her two doses of pulsatilla to take at intervals of half an hour, when she was to wait two days, and if no better, then to take two powders of mercurius. She took the pulsatilla on Thursday, and on Saturday the mercurius. Feeling no better on Monday, she came and said I had given her the wrong medicine, as she felt no better. I did not think I was wrong, and sent her blank powders, to be taken every two hours that afternoon, and two powders to be taken the second day if no better. I saw her on Friday and she said the medicine had cured her.

Now how much better thus than to change the medicine. I thought I was right, and a man who believes he is right should never be frightened. A man goes to a case of disease; he has been recommended to a family and is anxious to gain a reputation with its members; for instance, he has a severe case of croup to treat; now, if instead of giving one dose and waiting two hours for

its action and reaction, he gives a dose every fifteen minutes, he is not treating that case right according to any system.

Suppose you vaccinate a family of children who live next door to a case of small-pox; you would not think of revaccinating them the next day because you see no effect from the first vaccination. It is necessary to await the effect of the virus. You do not go the next day, nor the next; on the fourth day you examine the arm and find a slight redness.

If you are not a medical ass you will not revaccinate.

I once vaccinated a little child with what was called kine-pox. I visited the child on the fifth day and I found the slightest possible redness. In one case in which I used the same matter, I found no development until the tenth day.

We hear much controversy about the high and the low, but I think that one of the secrets of the success of such men as Dr. Guernsey is, that they study their cases and remedies, and after finding the right remedy use it in one dose; that dose is all they need to cure with. That is pure homœopathy.

Some men think it necessary to give the medicine lower and lower, and in a multiplicity of doses; this is because they do not find the right remedy. You will notice that the men who give the highest attenuations are men of the greatest care. I am not a high potentist, my highest being the thirtieth. I would go higher if I thought I could thus do better.

There is one point I notice and that is, that all who use the highest do *not* change the remedy. Dr. Guernsey can tell you things that are true, which would appear absurd to an unthinking man, who would consider him a literal fool. He speaks of using the ten-thousandth of a remedy in one dose; he, soberly, thoughtfully, judiciously makes his assertions to our Institute, and he causes one part to sneer, while a kind of little supercilious smile runs over the faces of the rest of its members. And yet what he states is an important fact. I have known it for a long time. When I see a man with three or four tumblers of water in a sick-room, giving *aconite*, and *belladonna*, and *bryonia*, all I can say is that he is not practicing a good homœopathy.

I read the account of a case of diphtheria in a Detroit paper, the other day, treated in this way. The man who reported it has become the editor of a periodical there, and is going to illuminate pure homœopathy; but it is not the homœopathy I learned forty years ago, because I learned it from Hahnemann and those who were like him.

DR. EDWARD BAILEY, of Detroit: My venerable friend, Dr. McManus, referred to me just now.

DR. MCMANUS, of Detroit: I did not know that.

DR. BAILEY: You referred to the person who reported this case of diphtheria. It was myself. I am the man who so treated cases of diphtheria that Dr. McManus inferred that he would not trust the treatment of his own children to me. Gentlemen, do you infer from that, as I did, that Dr. McManus never lost a patient? He is the man for this Association, if he can say that his single dose has cured every patient. He can bring a patient from the brink of the grave with a single dose of the thirtieth potency?

Is that what I am to understand from my friend Dr. McManus? If it is, I thank God that I came here to-day, for I never did more for myself or for homœopathy in my part of the country, than to learn this fact, that with a single dose of the thirtieth attenuation I could have saved my two little children. Had I but known this six short months ago, what a happy man I should have been. Now, I want to know if this is true; that is, is it what we must know as homœopaths. We want the truth, facts, not theories, when a human life is in the balance. Does Dr. McManus tell me that I treated my children wrongly; that they died because I did not give the right remedies? Has he got homœopathy reduced to such a point that he can save every patient? Is the patient to live forever because Dr. McManus has discovered this plan, this theory? Now as to the thirtieth dilution and the placebo following it, it is a well-known physical fact that when you give a drug, when you give a tablespoonful of water, or a grain of sugar of milk, you are giving a definite quantity of sodium. Every particle of air in which we live, breathe and move has a definite quantity of sodium in solution; you cannot see it, but you give it when you give the placebo. You can give nothing that does not contain the drug; the whole air is permeated with drugs. The very fact developed here to-day of the spontaneous evaporization from the earth, shows us that when we give the thirtieth dilution we are at the same time giving not one but a dozen crude drugs.

DR. MCMANUS: Can the gentleman prove that? Now I do not know anything about the gentleman, but claim the right to ask his pardon, because my remarks were not intended to be in any way personal.

In regard to placebos: water, in its purity, as a placebo, has in no way the property of the dose of *aconite* or *bryonia* that is given before it.

It is the business of the physician to give the proper remedy and cure his patients, and because he cannot understand the action of the medicine, it is no reason why he should not give it. Instead of stopping at one dose physicians multiply the changes,

and then the patient is made worse by the medicine intended to cure.

I do not profess to cure everything. I wish I could, for I would then transfer my power to the members of the Institute. I have, however, my own plan of private practice, and if the gentleman objects to my theorizing, I must remind him that it is the theorizing of Samuel Hahnemann—the theory of one remedy and one dose. I profess to be a Hahnemannian, and when I cease to be a Hahnemannian, I cease to be a homœopathist.

DR. B. F. DAKE, of Pittsburg, Pa.: There is one point in the paper which contains a popular fallacy, which I wish to combat. The doctor stated that calcarea is a successful remedy for disease of the bones, but who has ever observed this drug produce bone disease?

If it has no power to soften bones I deny that it is a homœopathic remedy for that condition. Now if it is not claimed, or if the position of Schussler is assumed, that being a constituent of bone, it is thus useful, we are not practicing homœopathy.

That is simply an attempt to supply a chemical element supposed to be wanting. Suppose you give a patient *calcarea phos.*, enough to impress the organism or affect the bone, would there not be a reaction? Our cures are all made by the reaction of the organic forces against the drug we employ. In this case we should produce an aggravation.

DR. POMEROY: I would like to ask my friend, Dr. Dake, if he thinks there is any merit in clinical provings?

DR. DAKE: Where we have such as can be relied on.

DR. POMEROY: They form a large part of the Materia Medica.

DR. C. PEARSON, of Washington, D. C.: I have a little to say at this time. Dr. McManus when he first spoke rather put me into good humor, and I felt like speaking.

I have felt a little in this Convention like the old physician who attended a meeting of young men and was called upon to speak, and who said that when he first entered the meeting he thought he knew a great deal, but had since discovered his ignorance. I have been pleased that we are so harmonious, and there is little fear of a rupture, as was predicted, so long as such a good feeling exists.

Dr. McManus did not expect to cure all his cases. The gentleman who followed him it seems, from his remarks, lost two children by diphtheria. Now, Dr. McManus does not know that he could have saved them with one dose, nor does any man, but the fact remains that the children died without the one dose.

And here is the point: Would they have lived had they had it? If the men who use low dilutions and repeat their doses can show a less mortality record than the high potentists, then there will be a show of reason in their denunciations of the high potency men; but this, I am satisfied, they cannot do.

I have practiced homœopathy for thirty years, in ten of which I used low dilutions; now I rarely give below the thirtieth or two-hundredth, as Dr. McManus knows.

We have met nearly weekly for the last three months in consultation, and we never have any trouble. I never suggested anything below the thirtieth, but as much above as I thought indicated.

I should say that the case we saw was incurable, it being one of cancer of the rectum.

Now, regarding the change or oxidization of remedies; they may change in the low preparations, but I do not think they do in the high. Some years ago a homœopathic pharmacy took fire, and the gentleman who kept it wrote to know if he could claim insurance on his medicines; he asked my opinion as to whether the smoke that filled the room in which they were had rendered them useless. I gave it as my opinion that the low dilutions were injured, but that the high were not.

I do not think the high attenuations change. I have used them from the same bottles for thirty years, and they act as well now as when fresh.

I don't think we can rely entirely on the microscope to determine the material particles of the high attenuations; we cannot change them by any chemical test, nor can we weigh them.

Dr. Brown: It is matter.

Dr. Pearson: That is a question. Whenever I give a remedy daily in a high dilution, and when I cure my patients, I see something in that remedy. I am sure of its efficacy. The high attenuations do cure, and I am satisfied, as was Hahnemann, to leave to others the guessing.

Dr. James: What was your reason for giving your opinion regarding the unchangeableness of the high attenuations when exposed to heat?

Dr. Pearson: The nearer a drug is to its pure state, the quicker it oxidizes, and this, I think, must be true of the bulk of the remedies. I think there is a point in trituration beyond which the material particle cannot be detected, nor after that point is the drug in the same condition as in the crude state.

Dr. James: Did you have this information in regard to drugs from Hahnemann?

Dr. Pearson: I think the doctor goes into detail. I must

make one statement. It is not the crude matter we want, but the invisible active principle inherent in it. No one expects to get fragrance from a dried flower, and I should be skeptical about using the trituration of the second, third, or fourth if it had stood forty-eight hours or more, as in that case I should be likely to have something else than the medicine. I think the high attenuations from metals should be run up quickly.

DR. WESSELHŒFT: It is getting late, and perhaps we had better discontinue this discussion. Dr. Korndœrfer asked a question regarding the use of filtering-paper. I only mentioned it as an auxiliary in these investigations. Under some circumstances the results would be correct after its use, and we would get extremely fine particles.

It has been stated that the gold ring wears away, and the rock yields to the dropping of water, but these are not our method of preparing medicines. Metals are capable of fine subdivision by other methods than those which have been in use. I alluded to a few of these myself, as a proof that subdivision could thus much more successfully be accomplished.

Now, the question is, is the trituration reduced to the greatest degree of fineness by the methods in use. As far as my evidence goes it is not.

It was said that the higher powers of the microscope are not as good a test as the systemic effects of the medicine. The eye is the most susceptible part of the system, and just think of the wonderful power of the microscope when it shows the three-thousandth part of a millimeter so clearly that one can count every particle as easily as one can count the members present in this room. It not only indicates the state at which microscopical examination has arrived, but it also convinces us of the wonderful perceptive power of the human eye. Dr. Moore, I think, said that certain metals appeared in the light of the sun and were revealed by the spectroscope. It is the light of the substance, and not the substance itself, that is seen; it is the light proceeding from the rays of the sun that is so revealed by the solar spectroscope that metals and minerals can be exhibited.

Dr. MOORE: There is no appreciable substance found in any of these revelations.

Dr. WESSELHŒFT: It is not the light that conveys the metal but only the metal that throws the light upon an instrument: we should all understand that.

Is it true that those who use high potencies cure more patients than those of us who use the low? They and their friends say so, but all we ask is that they will prove it. I deny that they cure more patients than we do. We assert that we cure as many

patients as they. I do not say we can cure more, but we want to cure more, and therefore want to see the Materia Medica on a better footing than at the present time. This is my reason for making these few observations.

On motion, the discussion was closed.

SECTION III.

REPORT

OF THE

BUREAU OF CLINICAL MEDICINE,

PHILO G. VALENTINE, M.D.,	St. Louis.
B. F. DAKE, M.D.,	Pittsburg, Pa.
S. LILIENTHAL, M.D.,	New York.
T. L. BROWN, M.D.,	Binghamton, N. Y.
W. L. GRISWOLD, M.D.,	San Francisco.
C. PEARSON, M.D.,	Washington, D. C.
J. S. MITCHELL, M.D.,	Chicago.
O. D. CHILDS, M.D.,	Akron, O.
A. S. COUCH, M.D.,	Chicago.
D. T. ABELL, M.D.,	Sedalia, Mo.
L. D. MORSE, M.D.,	Memphis, Tenn.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER II.

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LXVII.

A COLD, ITS NATURE, CONDITIONS, RESULTS, AND TREATMENT.

By B. F. Dake, M.D., Pittsburg, Pa.

In the discussion of this subject I propose to separate it into several convenient divisions, viz.: First, its *mechanical* and *physical*,—or what we might term, its *philosophical* consideration; second, its *physiological*· third, its *pathological;* and fourth, its *therapeutical.*

Philosophically considered, a cold, in its primary form, is but a *mechanical condition*, resulting from the ordinary application of material and physical forces. The disturbed condition of the harmony and normal operations of vital forces and functional activities consequent to this intrusion upon the unity of vital action, constitutes the substance of our second division, the *physiological;* while the resultant outgrowth and conditions, morbid changes, etc., induced by this disturbed functional action, presents the *pathological* aspect of the case. And the modifications of these morbid conditions and restoration of functional activities back to the normal condition, constitutes the *therapeutical* consideration of the subject. Hence, it will be seen, that what is so tritely called "only a cold" is, when taken in all its relations, a matter of much significance.

In a state of absolute health, we have all the functions of the system performed according to uniform laws of physical and vital action. Any departure from this normal operation constitutes the first condition of morbid action, or disease.

Health, then, is a normal condition of the vital functions and

forces of the system. Any departure therefrom constitutes disease. Primarily, a cold may be considered as a non-vital (abstract) physical condition—the loss of heat, and the consequent and inevitable contraction of matter, obedient to this universal law. Now, in this primary stage, there is no impression made upon the functions of the system, and if this force be at once withdrawn, the system reacts, as we say, and all goes on well again; it is but the ebb and flow, without any change in the current directions, and there is no morbid action; it might have acted upon inorganic and unvitalized matter the same; it is but a physical condition, non-vital.

But let us proceed a step further. In a normal condition of the vital forces the oxidizing processes of the circulation bring to the superficial capillaries of the system all the fulness of the arterial blood. Here, at the skin, certain elements which it possesses in ordinary excess, and of which it is the duty of the sudoriferous ducts to dispossess the system, are thrown off in what is known as insensible perspiration.

Any influence which tends to disturb the ordinary conditions of vital and functional action, will produce, if continued, disease in some form. A contraction of these capillaries of the skin, thereby shutting off a free and full supply of the circulating fluid at any point, is one means of accomplishing this result, and hence a source of disease. Now, if any considerable amount of surface be exposed to the unusual and prolonged action of cold from without, this condition is fulfilled; the capillaries contract, and the blood being with its heat-bearing, oxidizing influences unable to come to the surface capillaries, the skin cools down, and there follows a check of this insensible transpiration. Here commences the physiological conditions—the first disturbance of the functional activities. Now, the superabounding elements of the circulation, no longer able to find a wonted exit through these sudoriferous ducts and the skin, are thrown back upon the circulatory system, with all the redundancy and irritative elements of intended excretion, and there is a fulness and oppression experienced, that at once gives the evidence of malaise and approaching vital depression, only relieved, and that in part, as nature in her ever conservative efforts attempts to compensate for this departure in functional

action, by inducing some other organ or tissue in immediate relationship and sympathy, physiologically and functionally, to perform a double duty, its own and that of the disturbed tissue. First of all the kidneys and the lungs are tasked, but sooner or later the mucous or serous membranes that line the different canals and cavities of the system are somewhere put upon the strain. But this is an abnormal or vicarious action, and but for the safety-valve action of kidneys and lungs, whose duties in part are to unburden the vascular system of any sudden or excessive fulness, the vital activities might be abruptly overwhelmed under the superimposed burden. At this stage of action there is a vibratory condition between the excretories and secretories. Here, the ordinary state of what we term "a cold" ends; any progress beyond, and functional and organic disease may soon result, and the term becomes modified and the condition more grave, as some irritation, congestion, inflammation, functional or organic disease follows in the train. Here we come upon the pathological ground of the case, as we reach the changes and conditions wrought by the disturbed forces, now of morbid action. First, a fulness and dryness of the mucous membrane of the parts attacked; then a vascular turgescence; then secretion and exudation of mucus, with more or less relief to the redundancy of the circulation, but prostration, more or less in proportion to the amount of surface and organ invaded. Sometimes we have all the determination directed to the nose and head, the nasal cavities and frontal sinuses suffering the shock of the morbid attack, and coming out of the fray with more or less perfect relief and restoration, according to the efficacy of the reactive force of the "*vis medicatrix naturæ*," aided or not by the recuperating agencies of science, "*secundum artium medicum.*" This morbid condition, in its first localized stage, is properly known in the books as a "*cold in the head.*" In this first state, the membranes are dry and the nose "stuffed;" and not until it has reached the secondary stage, and the turgid schneiderian or pituitary membrane that lines the nasal cavities or canals and sinuses communicating with them, one side or both, begin to secrete, does the oppressed system begin to experience a sense of relief. This relief is not absolute; nor indeed can it be until the local conditions are restored to a normal state again, even though

the conditions of the skin and superficial circulation, with natural secretion, have been restored to a normal state again. This last fluent condition of the nose, sometimes involving the eyes, is known as a "catarrhal cold of the head," or coryza. This may advance to a prolonged condition of moderate and slow inflammation, with slight secretion, the fluid part of which, drying as fast as secreted, leaves a thin scale of solid substance, adhering with more or less tenacity to the subjacent parts, constituting what is termed *dry catarrh;* a contradiction of terms, but understood by the above explanation. An advanced stage of this catarrhal disease of the pituitary membrane may result in ulceration, constituting what is known as ozæna, which rapidly causes structural changes and organic destruction. When the acute attack of catarrh extends down into the fauces, larynx or bronchi, and numerous individuals in the same community become simultaneously and similarly affected, the condition is termed influenza or grippe. Here, also, functional interruption may in turn be succeeded by structural changes and organic lesions. The pathological status of all catarrhal conditions at the same stage of morbid action are essentially the same, so that once discussed for one locality, it is sufficient for each particular locality: hyperæmia, vitiated secretion, turgescence of mucous membranes, abnormal exudation of epithelial cells and abundant formation of new ones, etc., etc. We might follow these same influences to the serous membranes of the system, and observe many physiological actions and modifications superinduced by the same original force, and the pathological conditions resulting therefrom. If, for instance, the transmission be toward the pleura, through some inherent condition or attractive force, then a similar *modus operandi* may give us a disproportion in the normal equilibrium of secretion and absorption, and there being no escape-way for this superabounding fluid, we have it collecting in the form of effusion.

So we might follow up the resultant conditions far removed from the starting-point, and demonstrate the multitude of morbid conditions the legitimate offspring of what may be called "cold-taking."

We observe, then, that the first factor in the history of what

we term "a cold" is the departure of caloric, a physical condition from a physical force; the functional disturbance superinduced thereby a physiological condition; and the resultant morbid impressions therefrom a pathological one.

These results from cold-taking are not confined to the organs and tissues situated above the diaphragm, but may as often affect those situated below, and in a similar manner. Thus we may have blennorrhœa of the bowels and stomach, or any part of the alimentary canal; catarrh of the bladder and its outlets and inlets, of the uterus and vagina; peritoneal metritis and abdominal peritonitis; and a host of other morbid conditions might be instanced as of frequent reference to the same source for exciting cause, "checked perspiration."

It is not our purpose in this paper to exhaust the subject of "cold-taking" and its resultant phenomena, which would fill volumes.

But in this connection we might be asked why a seeming selection is made of some particular locality or kind of tissue at one time, while at another time a distant and different one is the seat of attack? We can only answer that the tension or strain causes the machinery to first yield where it meets with the least resistance, but generally in those tissues or membranes that bear an intimate relation to the original tissue whose functions are disturbed.

But there are modifying influences outside of the system that enter into consideration in this discussion.

That temperature and local causes tend to weaken or strengthen and fortify certain tissues and organs, thereby making some liable to attack, and others to resist inroads, is manifestly true.

Thus we observe the ordinary salutary and benign influence of summer temperature in strengthening the tissues and organs of the naso-respiratory system, and catarrh of these localities is improved by simply removing into a warmer latitude, while the gastro-intestinal system is weakened and rendered more liable to sudden attacks by the same influences, and is equally benefited by dwelling in a colder climate.

Hence the expression of the old doctors, "Diseases go above the diaphragm in winter and go below it in summer months." These

results are often but the legitimate consequence of a suddenly checked transudation of superabounding fluids and excreted azotized material, longer hostile to the harmony of the vital forces; nature thus attempting by compensating or vicarious action to conserve the normal conditions and relieve the system of this redundancy.

Other causes there are, to be sure, constitutional, systemic or induced, predisposing or exciting, that may give occasion for each and all of these several disturbances, idiopathically or by idiosyncrasy, but by far the major part are the direct or remotely indirect result of interrupted excretion of the skin.

Having said thus much upon the causes, conditions, and results of "cold-taking," it now remains for us to consider the best means of preventing and remedying them; the *therapeutics* of the subject.

As the cause of the primary condition is checked perspiration by the physical force of *cold*, we have for the first remedy, "preserve the normal caloric" and keep the surface warm. But so soon as we find that the system in any part of the surface has already experienced a chilling, we know that the patent orifices of the excretory ducts are closed and the skin-capillaries are contracted, and we must make haste to select a remedy for the speedy restoration of this disturbed equilibrium.

At this stage of affairs there are abundant means to accomplish this end, and it matters very little whether we briskly rub the surface with heat or cold or send our patient out upon a vigorous exercise, provided the reaction shall abundantly open up these contracted channels to full and free egress and ingress of exchange, for it is one of the functions of the skin to receive oxygen as well as to expel redundant fluids, carbonic acid and azotized substances, provided also we take care to preserve this normal condition when once obtained by suitable protection.

But at this point we may ignore the etiological history of the case and fall back upon therapeutics. We have the mighty fulcrum of both pathology and symptomatology upon which to rest our lever, and also the *similimum* of our therapeusis. Here homœopathy may achieve one of its grandest triumphs, and we need not grope around amid the uncertainties of experiments

until our invading foe has passed the vestibule of the temple; but a regiment of volunteers springs up at hand, full panoplied for the conflict, more ready than Cæsar's dragons, in battalions or single-handed, eager for the fray. Conspicuously in the front ranks stands *Camphora*, with its dashing, trenchant, but ready blade, with quickly repeating force to dare and do. If taken within the first few hours, it is more than a match for the invading foe.

Frequently repeated, it radiates from the centre out to the circumference, and sends out its relaxing influence to the periphery, opens up the locked and barred capillaries, and restores the excretory action of the skin.

This centrifugal action of camphor undoubtedly is accomplished through its immediate and rapid control over the cerebro-spinal system, and through it to the vascular nerves of the surface. I have no doubt but that the primary action of camphor is one of *contraction* and *depression*, but this contraction and depression is so short and evanescent, and relaxation and excitation so soon supervene, that the primary effect is usually supposed to be that of stimulation. Thus whenever a sudden attack has supervened in which this primary condition of depression and contraction has thrown back upon the system a redundancy, and the vascular system has become deranged, and a hyperæmia and turgescence of remote tissue has become a resultant condition, *Camphora* may be its proper *similimum*. It may reach a little further, and be *en rapport* with more remote conditions having a similar starting-point.

Thus what are popularly termed *cramps* of the stomach and bowels, sudden attacks out of good health, of vomiting and purging, acute gastralgia and enteralgia, and dysentery itself, in the precursory and incipient stage, most frequently the result of checked perspiration, often find the first and sufficient remedy in camphor. Cholera morbus, which most often comes on at night, when the temperature of the surface has received a sudden depression, has often no better remedy than camphor, and cholera Asiatica, if caught in its incipiency, at once is readily controlled; and if we are to believe our coadjutor Dr. Rubini and his Italian *confrères*, it overtakes the morbid force at any

and all points, and conducts it to a sure and safe issue. Now *how* it does it is not so plain as *that* it does it, but most probably it does it by commencing the first manifest action upon the periphery by relieving the asphyxiated skin, and thereby eliminating from the circulation the *materies morbi* in the form of redundant azotized matter. In the normal action the system eliminates through the skin at least one hundred grains of this nitrogenized matter daily.

Next in the category of early acting remedies comes *Dulcamara.* Its sphere of action seems to be directed through the cerebro-spinal system upon the vascular system and skin, and then back again upon the mucous membranes. But it does not seem to follow the morbid changes very far or deep into the system. It seems to exert a slightly different action upon the skin, as it not only is capable of restoring its normal excretions like camphora, but also by a perfect elimination of morbid products may restore lost integrity of tissue, both acutely and chemically produced.

The depression and aching of the system consequent on exposure to a sudden wetting or damp seems to be the legitimate *similimum* for this remedy, and if the compensating discharge of mucus be caught before there is *fixed* an impression of morbid action upon the tissue, it will turn back the disturber, and all will go well again. Its close relationship to both skin and mucous membranes is seen in its therapeutic aid in restoring to the skin, eruptions that sometimes are repercussed to mucous membranes, or sending out often such as belong there, which are causing asthmatic constriction and oppression, vomiting or diarrhœa. Hives is a familiar instance of this kind.

Closely allied to dulcamara in resultant action is *Rhus toxicodendron.*

But the distinguishing difference seems mostly to lie in the direction of its paralyzing effects over the vascular nerves of the surface. It does not seem to follow a cold into the system farther than the soreness and lameness produced by this paralyzing effect by a sudden exposure to cold, damp or wet. To be sure, it acts powerfully upon morbid conditions of the mucous membranes, but that belongs to a deeper and more penetrating

influence, in the very blood-poison itself. There may be a condition of the blood thus vitiated and poisoned by accumulated, superabounding azotized matter, resulting from the cold, *asphyxia of the skin*, where rhus would be *en rapport*, and the only remedy to be considered. And here, too, we might observe some parallelism between rhus and dulcamara, both being more or less indicated in skin diseases, both acute and chronic. The sympathy and relations between lungs and skin thus manifested reciprocally whenever any intrusion disturbs the functions of either, and the close relationship in the range of action of the remedial agents of the Materia Medica applicable to these conditions, is very remarkable and interesting to contemplate.

The next remedy to be considered in this connection is *Aconitum*. As we advance a stadium further, and arrive at that point in the history of a cold in which the reactive forces begin to increase the frequency of the pulse, and the pendulum is vibrating between chill and heat, we have no such characteristic remedy as aconitum.

It is a brave and valiant soldier, a regular in the grand old army of defence, and may, with reliance, always be sent out on the advance guard when there is ready and quick work to be done and the foe comes boldly up to the front; skirmish work may be done by lighter dragoons, but quick and hard fighting is reserved for aconitum. Hard and persistent fighting, as the foe surrounds the citadel or has advanced to seize upon the treasures of life, may require the heavy and tenacious fighting of the reserve force; but to be the ready guard to turn back the foe at his first earnest indication of actual battle, none so sure as our glorious aconitum. It goes to work at once upon the capillaries, through its well-known action upon the ganglionic nervous system.

Aconitum will follow this disturbed condition through all subsequent changes up to active inflammation, and there its sphere of action soon terminates. It will not only direct its controlling action over mucous membrane and serous tissue, but follow hard after the disturber wherever there is a capillary or arterial excitation, even into the depths of the heart itself.

If the disturbing influence has attacked the serous membranes,

aconite follows hard after, but stops where synocha stops, and must be supplemented or supplanted by some more hæmatic remedy like bryonia, or organic reaching remedy like arsenicum, or remedy reaching down into the vegetative sphere like sulphur and some others.

I should like to stop here and follow up the disturbed conditions superinduced by this primary cause, "cold-taking" or checked perspiration in its detailed results, but this labor would carry us into all the tissues of the system and to a vast majority of all the diseases, both acute and chronic, which befall humanity. It is too prolific a subject for a single paper, and is only compassed by numerous volumes.

You can scarcely mention a disease that does not have its origin directly or remotely in this source, and I can only refer to our benign law that will unerringly point out by symptomatic and pathological indication the true *similimum—secundum artem homœopathicum!*

LXVIII.

CATARRHO-MALARIAL FEVER.

By Lucius D. Morse, M.D., Memphis, Tenn.

I coin the term "catarrho-malarial" as descriptive of a form of fever which has prevailed quite extensively in this portion of the Mississippi valley during the last few years. It is a malarial fever masked by catarrhal symptoms, prominent, in most cases, throughout the whole respiratory tract. The onset of the disease resembles almost exactly the acute stage of an influenza or "cold." Sensations of chilliness, more or less pronounced, are present, with aching and soreness through the extremities, headache and drowsiness, speedily followed by fever, which may run high for twelve or twenty-four hours. During this time the pains frequently abate, and may even entirely disappear. Meanwhile the catarrhal symptoms develop rapidly. There is, usually, loose cough, fluent coryza, and often excessive secretion in the throat and bronchial tubes. The expectoration is at first a whitish ropy mucus, changing to a yellowish cast after two or three days. Often the lungs become gorged and there is dyspnœa and alarming rapidity of the pulse. Delirium frequently supervenes, or the sufferer lies in a stupid condition, or sleeps constantly. Paroxysms of coughing are frequent and usually without pain, but sometimes there are sharp stitches in the chest, especially just above the liver, which interfere somewhat with breathing and greatly annoy the patient. The cough in children is sometimes harsh and croupy, but more frequently loose and rattling. Irritation of the throat is often present, and the tongue will nearly always be found furred a milky-white. This appearance sometimes changes to a dirty yellow after the fever has been fully established. The bowels are generally confined at the out-

start, but may afterwards become loose, the discharge being yellow or brownish as to color.

The fever in many cases persists day after day in spite of treatment, frequently rising at night and subsiding somewhat towards morning.

The complaint under consideration is more prevalent among infants and young children, but adults are by no means exempt. It sometimes proves fatal to the former; congestion of the lungs and brain taking place and the scene closing with violent convulsions or profound coma. In this tendency to active congestion lies nearly all the danger. Let me cite a case in illustration:

A few days ago I was summoned in great haste to see an infant in spasms. The family medical adviser could not be found. I hastened to the place indicated and found a fine, large boy, nine months of age, racked by powerful and constant convulsions. There was loud rattling of mucus in the throat and lungs. The head and chest radiated heat like a stove. It was easy to see that the end was close at hand. Ten minutes after my arrival life was crushed out of the little sufferer in the grasp of a tremendous spasm. The child was literally throttled.

The history of this case is very instructive. Five or six days before, the child had been attacked with symptoms which the attending physician pronounced as occasioned by a bad cold. Fever rose high and continued for three days, and there was rattling in the chest and throat. The child appeared stupid, and slept most of the time in its crib or its mother's arms. It nursed but seldom. The mother could hear the wheezing in the infant's breast, and feel the violent beating of the heart as she held the little fellow in her arms. It was a strong and vigorous child, and had never known sickness before. Improvement in the child's condition manifested itself on the fifth day. Appetite returned and the little fellow was comparatively bright and lively, but still there was a loose, rattling cough, with the old wheezing in the chest. On the afternoon of the sixth day the mother put the child in a baby-carriage, and took him some distance to visit a neighbor. He was all life and animation as he rode along, but hardly had the mother taken him into the house before he drooped, and a few moments later, while nursing,

went off suddenly into a severe spasm. In considerably less than an hour from the time the mother left home the child was dead.

The slight exposure and the excitement incident to the short outdoor excursion, coming as they did just at the most critical moment, set up a profound congestion, which, as we have seen, proved fatal with appalling rapidity.

Occasionally this form of fever complicates whooping cough, and in young children speedily brings about a condition which may well inspire the gravest apprehensions.

In the treatment of catarrho-malarial fever the practitioner should never lose sight of its malarial basis. This it is which predisposes so powerfully to congestion and renders treacherous and uncertain a complaint which might otherwise be looked upon as comparatively trivial.

I have learned to look upon the loose cough, the furred tongue and the high fever, all present at the very onset of an attack, as peculiarly characteristic of *catarrho-malarial* fever. It is sometimes confounded with *pneumonia,* but there is not much excuse for such a mistake.

We come now to a brief consideration of the remedies.

VERATRUM VIRIDE.

The writer has found this drug of paramount importance in the first stages of the complaint under discussion. The high fever, loose cough, the racking headache, the nausea, the dreaded tendency to congestion all fall peculiarly within its province. In my practice I use the strong preparation known as Anwood's tincture, in doses of from one quarter of a drop every half hour up to a drop or even two drops every half hour. The last-mentioned dose is called for only in urgent cases, and the patient should be watched carefully and the time between the doses lengthened or the remedy stopped, as soon as threatening symptoms are relieved. I usually find that in the average case from six to ten drops of the strong tincture in two or three ounces of water, a teaspoonful every half-hour, hour or two hours, according to urgency of symptoms, answers all purposes.

The *veratrum* relaxes the tension of the circulation and predisposes to perspiration; its effects being speedily apparent.

QUINIÆ SULPH.

When the patient has not been previously drugged with this remedy, its effects are prompt and satisfactory in conditions where the following symptoms are prominent: white coating of the tongue, gastric irritation, food does not digest, rolling and rumbling in the bowels, sensation of great weakness and lassitude, aching in the limbs, fever alternating with chilliness and periodical headache, stoppage of the nose or fluent coryza. This drug follows admirably after *veratrum viride* has subdued the more active symptoms. It may be given at the outstart in light cases, when the patient is not ill enough to go regularly to bed.

The writer uses the 1st decimal trituration and the crude drug. He gives from one to two grains at a dose of the preparation chosen, and repeats every two or three hours, according to severity of symptoms, until six or eight doses have been taken, and then gives two or three doses a day until the symptoms are entirely relieved.

CHINA.

This remedy is useful in those cases where the cough passes into the second stage and the sputa are thick and yellowish; it is also applicable when the nose becomes sore and discharges bloody mucus.

IPECAC.

This drug is applicable, as an intercurrent remedy, where there is a constant nausea, with pain in the stomach and bowels; also where there is disgust for food and vomiting of greenish bilious matter.

TARTAR EMETIC

Will be found excellent in those cases where there is a suppression of the expectoration, with cold clammy perspiration, rattling of mucus in the trachea and chest and irresistible somnolency.

BRYONIA.

The writer has found this remedy useful in relieving the painful stitches in the chest, which often occur in the beginning of an attack; also where there is heat in the chest and constant tendency to take a long breath, and a painful soreness over the entire body as though the patient had been beaten.

LXIX.

AUSCULTATION IN LARYNGEAL DISEASES

By Philo G. Valentine, M.D., St. Louis, Mo.

Physical exploration in diagnosing laryngeal or tracheal affections is not so imperative as when the pulmonary structure proper is the suspected seat of disease.

Symptomatic phenomena, as presented in lung complaints, should not be overlooked or underestimated, nor too much stress laid upon physical signs, although it cannot be denied that they do furnish the chief part of the positive proof required in cases where the lungs are involved in any morbid process.

It is the reverse, however, with affections of the air-passages above the bifurcation of the trachea. Here, subjective phenomena are largely to be relied on in the diagnosis, and the physical signs, though not by any means to be ignored, hold a subordinate rank.

In classifying symptoms and signs care should be taken to distinguish groups that belong to individual diseases from other groups that are common to a great many kindred diseases. The treatment of the diseases of the larynx has long and justly been considered as one of the most important specialties into which the practice of medicine has been divided, and experience has shown that it consumes long years of close study to master the anatomy, physiology, and pathology of this wonderful organ of the voice.

Of the different methods of exploration now familiar to the diagnostician, auscultation is the best adapted to the investigation of diseases of the larynx and trachea, although to a limited extent palpation and pressure are useful. Percussion may be

considered as altogether impracticable. Laennec, the discoverer and originator of auscultation, did not recommend the use of the stethoscope as especially applicable to the trachea, but Stokes, of England, and Barth, of Paris, have carried their investigations farther in this direction, and have opened a rich field, and one worthy of more extended research.

In conducting our explorations in laryngeal or tracheal complaints, auscultation may be made either *direct* or *remote*. By this is meant either solely over the windpipe or below, upon the chest. The object in examining the chest is to ascertain whether there is a pulmonary difficulty coexisting or not, a fact very important at all times to know, as without such information thus elicited a satisfactory opinion cannot be given.

The three classes of sounds heard by auscultation in health are tracheal, bronchial, and vesicular. The laryngeal sounds being so nearly identical with the tracheal are embraced under the latter head. In order to auscultate the trachea, place the stethoscope in front above the sternal notch, and in this situation will be heard a sound accompanying both the inspiratory and expiratory acts.

This sound possesses a certain timbre or quality which impresses one with the idea of air passing hurriedly through a tube, and has, therefore, received the name of *tubular*. The inspiratory tracheal sound differs somewhat from the expiratory sound. The two sounds are not continuous but separated by a well-defined brief interval. Both have a tubular quality, both higher in pitch than what is known as the *vesicular murmur* in the healthy lung, and the expiratory sound is more intense, longer, and in pitch higher than the inspiratory. These are the normal sounds heard in this region in health, and any deviation from them will imply some mechanical or pathological change in the air-passages, heart, or lungs.

The sound of *ch, soft,* spoken in a low whisper, will represent the normal tracheal sound. Tracheal respiration is heard sometimes with distinctness by placing the stethoscope posteriorly upon the cervical vertebræ. I desire, however, in this paper to insist upon, and to teach, the absolute necessity, in laryngo-tracheal diseases, of looking farther in our explorations than the

air-passages themselves, and that our examinations should *always* extend to chest auscultation in *all* throat diseases attended with a cough, with or without expectoration, with or without emaciation, with or without hæmoptoe, with or without dyspnœa.

This is the only mode of applying an infallible test; the only way of knowing whether the disease be merely local or clearly constitutional, and of ascertaining whether it be catarrhal, inflammatory, specific, or tubercular. Such information must be gained at the outstart, or the treatment will be but a poor guess, never satisfactory, intelligent, or wholly successful.

Symptoms alone, though gathered in throngs and legions, will never point unmistakably to a diagnosis here, nor to unerring therapeutics. One of the weakest points in our provings is the entire omission of physical signs. The more we practice the more we feel this want, this great deficiency in our Materia Medica. Hahnemann and the earlier provers knew nothing of auscultation, and it remained for the celebrated Laennec, of France, to invent this most valuable process, something over fifty years ago, and nothing discovered or invented during the past century has given such a tremendous impulse to our knowledge-gaining facilities for thorough examinations in all thoracic diseases. The experienced chest explorer and auscultator, with an educated ear, can now give a positive and reliable opinion in any given case, and predicate the ending almost unerringly.

The pathological conditions giving origin to adventitious auscultatory signs are the following:

1st. A diminution of the calibre of the tube, either at certain points or over its whole extent. This occurs in connection with various affections, viz., swelling of the lining membrane and submucous infiltration in laryngitis; œdema of the areolar tissue above the vocal cords (œdema glottidis); spasm of the glottis and laryngismus stridulus (false croup); exudation of lymph on the mucous surface (true croup); accumulation of viscid adhesive mucus; tumefaction of the margins of ulceration; vegetations or morbid growths, and the pressure of an aneurismal or other tumor.

2d. Loss of substance by ulceration from tuberculous or syphilitic disease.

3d. Membranous deposit, becoming loose and partially detached, and a pedunculated polypus admitting of change of position.

4th. Accumulation of liquid mucus, purulent, serous, or bloody, and the presence of foreign bodies.

These new sounds are exaggerated, sibilant and sonorous râles, such as are heard in the large bronchia, and they indicate morbid states. They sometimes are so loud as to constitute stridor or stridulous breathing, and are audible without the intervention of a stethoscope. All modified respiratory sounds have special diagnostic significance. A metallic sound is like a current of air forced through a brass tube, and is one diagnostic of croup before the exudative membrane is formed.

A humming sound, like the rapid opening and shutting of a minute valve, is characteristic of chronic ulcerative laryngitis, and if the sound remains circumscribed the precise locality of the ulcer may be recognized. If heard equally over large and small spaces the diseased process is known to be extensive. At times these morbid sounds are so loud and diffuse as to be conveyed to the chest so as to conceal in a great measure the pulmonary sounds. If false membranes are present and are loosened in the larynx or trachea, as is frequently the case in true croup and in diphtheria, this will be ascertained by having a tremulous flapping sound, called *tremblotement.*

When this sound is confined to the larynx the prognosis may be considered favorable, as the exfoliation of the pseudo-membrane is taking place. If heard lower down over the trachea, and especially in the bronchi, the testimony is unmistakable that the malady is extending and the prognosis becomes correspondingly grave.

The presence of pedunculated polypi moving to and fro in the windpipe would be recognized by a peculiar *friction-sound*, more or less intense, according to the size and form of the tumor; inflammatory œdema of the glottis, by a high-pitched *sibilation* or *whistling*, caused by the great narrowing of the calibre of the passage.

Destructive ulceration of the vocal chords by enlarging the aperture of the glottis would be known by the modification it would produce in the expiratory sound, reducing it in pitch to the same tone as the inspiratory.

Rattling and bubbling, and gurgling râles testify to the presence of fluids in the trachea or larynx, but whether it be mucus, pus, or blood, the expectoration alone can decide. In certain cases of hæmoptysis, where the moist râle is confined to the larynx, and no morbid sounds are found in the trachea or lungs, the evidence is conclusive that the hæmorrhage was from the larynx and not from the lungs, a most important fact to know in any case of bloody expectoration.

In affections of the larynx and trachea, then, auscultation furnishes certain pathological information not ascertainable by any other mode of examination, and is, therefore, entitled to distinguished consideration.

But we must not stop here; the examination of the chest must also be made before our investigation is complete. In this way, grave errors in diagnosis will be obviated, and the question settled about the coexistence of pulmonary disease. In chronic laryngitis it is of the utmost importance to decide the problem of whether or not it be syphilitic, or associated with tubercular deposits in the lungs. Chest-auscultation answers the inquiry. There are many practitioners who, not availing themselves of auscultation of the chest, persuade themselves that the disease is confined to the larynx exclusively. Such a thing as *laryngeal phthisis* is really very rare, but a long-lasting, obstinate and troublesome chronic laryngitis justifies the presumption that tubercle already exists in the lungs, but the doubt can only be determined by physical exploration.

Again, the auscultator is enabled by auscultating the chest to determine whether an obstruction seated in the larynx is produced by a spasm of the glottis, or whether the calibre is diminished by some physical cause, as the accumulation of morbid secretions. If spasm be the cause, the vesicular murmur will be interrupted, paroxysmal, and variable. But, if it be the result of diseased conditions, the diminution or suppression of the natural murmur will be persistent. Should the diminished

vesicular murmur be equal over both lungs, the obstruction is in the trachea; if there is a difference in the murmur heard on the different sides, you may be sure there is lung disease as well as laryngeal, because lung disease is never equal in its ravages on both sides of the chest; there is always a disparity.

An aneurismal or other intrathoracic tumor, taking its origin near the summit of the thorax, may be diagnosed by the vesicular murmur disappearing first on the corresponding side, and afterwards extending to the other, by reason of its growing upward, and at length collapsing the trachea above its bifurcation.

In conclusion, I would urge that it is always safe and proper in all laryngo-tracheal affections, to carefully auscultate the chest before declaring the diagnosis or beginning the treatment.

LXX.

ADDISON'S DISEASE, WITH A CLINICAL CASE.

By J. S. Mitchell, M.D., Chicago.

Humani nihil alienum. This helps to explain why distinguished physicians, notably Addison, Greenhow and Wilkes, have devoted much patient study to a disease so infrequently encountered that the lifetime of a practitioner with an extensive field may pass without the observation of a single case. Addison's disease usually occurs in those in humble walks, and hence is more generally seen in hospital service. Pecuniary considerations, therefore, had little weight in urging it upon their attention. This is much to their credit. As we add year by year to our knowledge of rare diseases, it is shown that they throw light not only on other unusual affections, but also on those of common occurrence. This afforded them, undoubtedly, some inspiration. Addison's disease aids us in our knowledge of Graves's disease and phthisis pulmonalis. The charm of novelty has its attractions, and though this may be regarded as rather ignoble for scientific minds, it is, perhaps, fortunate that it has some influence.

My personal observation is limited to a single case, but it was so typical that I may be able in the remarks that I base upon it, after careful comparison with the thirty-seven which Greenhow details, to add a mite to our meagre literature on morbus Addisonii.

Addison had been in practice thirty years before he discovered the disease to which Trousseau applied his name. It was characterized by general anæmia occurring without any discoverable cause whatever. No loss of blood; no exhausting diarrhœa; no chlorosis; no purpura; no renal, splenic, miasmatic, glandular,

strumous, or malignant disease; and followed, after a variable period, by a fatal result. It was further marked by remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar bronzing of the skin, occurring in connection with a diseased condition of the suprarenal capsules. Greenhow has collated three hundred and thirty-three cases bearing on this disease, but so few are absolutely typical that I venture even before this audience to give the following details of the one which it was my privilege to attend. Mr. S., a well-known citizen of Chicago, capitalist, first complained in the summer of 1872 of a dry cough, which he attributed to the dust of the burnt district, to which he was much exposed while superintending building operations. It improved during the following winter, but returned on each exposure to cold. There was no pain in the chest, but some aching in the shoulders. No new symptoms appeared until 1875, when he failed in flesh and strength. After some fifteen months of general failure, the discoloration of the skin commenced. With this symptom came attacks of dizziness, violent hiccough, and extreme prostration. *Cough continued somewhat all the time.* Early in September, 1876, he was worse. At this time he first came under the care of a physician. A prominent old-school practitioner was called, who pronounced the case induration of the liver. He gave Gum guaiacum and Iod. potass., which promptly relieved all the distressing symptoms except the cough. For three months he felt better than for three years previously. About January, 1877, he failed again. Old-school medication ceased to afford further relief. On February 28th I was called, and, after a careful examination, diagnosed the case Addison's disease. I noted, during the examination, the existence of slight induration in the apex of the right lung. The appearance of the skin was typical; it was just the color of the imitation bronzes vended by the Italians in our large cities. It was most strongly manifested in the face, neck, upper extremities, genitals, mesian line, and chest. The skin *was soft and smooth;* the conjunctiva clear as crystal. The patient was about the room, but exceedingly weak and easily prostrated; appetite fair; bowels regular and sleep normal. His pulse was very weak and only *fifty-eight.*

Gave Phos.[30] trituration (Boericke & Tafel's). Improvement was marked. In about forty-eight hours he had increase of strength and better appetite. He continued to improve until March 20th, when he was attacked with gallstone colic. The exhaustion resulting proved too great. Notwithstanding the aid of the veteran Dr. George E. Shipman, who was called as counsel, he died the next day. *Sectio cadaveris*, made thirty-six hours after death. Rigor mortis marked. Pleuræ showed old adhesions and considerable sero-purulent fluid. Apex of right lung small nodules (tuberculous), size of walnut, with slight areas of inflammation. Liver normal in size. Lower portion of right lobe dark from post-mortem stasis only, I judged. Gall-bladder enlarged and filled with dark stones, closely packed, eight in all, size of a hickory nut. Suprarenal capsules both nearly obliterated, save the fibrous envelopes, which were thickened. The right had some cheesy matter remaining. The left contained within the capsule some little fatty substance. The capsules were quite adherent to the kidneys. The kidneys were very slightly congested. There had been no trace of albumen during life.

We pass next to the consideration of some of the individual symptoms of the disease. First: The feebleness and slowness of the pulse. It is matter of regret that Greenhow gives in his abstract of typical cases so few observations concerning the pulse. I regard it a very important clinical feature of the disease. Since most of Greenhow's cases presented some evidences of tubercle in the lungs, we might reasonably expect to find in those in which it was noted a tolerably high pulse. This we do, and usually proportioned to extent of tuberculous disease. The pulse does not, however, tend to run as high in Addison's disease as in phthisis. In one case, where there was well-marked phthisical complication, the pulse was lower than in the case observed by me, 52 as against 58. In Graves's disease the pulse runs high, 120 to 150, and without febrile movement. Summing up, we may say we have in

Graves's disease, pulse	120 and 150
Phthisis pulmonalis, pulse	80 " 132
Addison's disease, pulse	52 " 100

These relations are so constant as to furnish us a reliable clinical guide. The feebleness of the pulse in morbus Addisonii is constant and significant.

The temperature in this case remained nearly normal until the day of death, when it fell to 92°. Observations were taken three times daily. The usual temperature range is a little below normal, 97° to 98.4°, unless we have psoas abscess complication, where the temperature is higher, 100° and 102°.

DISCOLORATION OF SKIN.

This is sufficiently characteristic where it exists. From the color already noted it may deepen to the hue of a mulatto. It shades gradually into the lighter colored integument. The pigment lays in the deep layer of the rete mucosum. Pityriasis versicolor, syphilis, pregnancy, jaundice, and chronic phthisis, may each give us discolorations similar to that in Addison's disease. We distinguish pityriasis versicolor by the position of the spots on the trunk and limbs and their abrupt margins. The well-known coppery color and patchy character of syphilitic eruptions give us plain enough diagnostic marks. In both these it is almost needless to say the skin is rough, and the pigment on the superficial instead of deep layers of the epidermis. The three last forms mentioned resemble more closely the bronzing of Addison's disease, since they are on the same layers and are smooth. We diagnose these by their situation, their well-defined edges, and lack of tendency to increase with the severity of the disease.

A word with regard to those cases where there is destruction of the suprarenal capsules without discoloration of the skin. Cancerous degeneration or suppuration of the glands may cause their entire destruction without the existence of discoloration. We need, therefore, a specific form of inflammation to result in the discoloration and constitutional symptoms. My patient presented the dark specks on the already bronzed surfaces, which is also characteristic.

Summing up the diagnostic points of the discoloration of the skin in Addison's disease, we have

Its bronzed color, varying from color of imitation bronze hue to mulatto.

Its situation on face, neck, and parts normally without pigment.

Presence of black specks on bronzed parts.

Smooth feel of integument.

Clearness of the conjunctiva.

Edges not well defined.

Progressive increase of pigment with severity of constitutional symptoms.

Situation of pigment in deep layers of epidermis.

Frequent presence on mucous membrane of tongue, lips, and gums.

ASTHENIA.

This is more profound than in any chronic disease known, exceeding the same condition so marked in Graves's disease. In fact, as in my case, it may be after the bronzing the most typical symptom. It is usually progressive, though occasionally, as in the case cited, intermittent. With it come the other symptoms of the disease, the weakness of the heart's action, the attacks of dizziness, the irritability of the stomach, the excessive drowsiness, almost reaching coma, and the train of nervous symptoms occasionally existent.

An interesting subject is the relation between the constitutional symptoms and the bronzing of the skin. In typical cases, related by Addison, Wilkes, Bennett, Leone, Resil, and Munro, the discoloration had existed from three months to several years before the constitutional symptoms made their appearance. On the other hand, here we have a typical case where the constitutional symptoms appeared fifteen months before the bronzing. Similar cases are recorded by Ploss, Robertson, Tuckwell, Andrews, and Workman.

A singular feature is that most of the cases above noted were of patients in the higher walks of life. In those from the lower classes (the largest number as before noted), there was discoloration at about the same time the constitutional symptoms appeared. The explanation of this variability Greenhow does not attempt

to give, nor has any other writer on the subject so far as I am aware.

In the consideration of the next point I shall endeavor to assign the reason. Passing now to the most practical question, as it strikes my mind, concerning this curious morbid condition, we have to consider its relation to tuberculosis.

Greenhow, who has given more study to the disease than any other writer, devotes but few words to this subject. He thinks it not strange that the "vulnerable" constitution predisposing to the development of low chronic inflammatory processes should cause these two diseases not infrequently to coexist in the same patient. Later he says there has been a very small number of cases in which it does appear as if the lesion in the suprarenal capsules characteristic of Addison's disease had arisen as part of a general chronic tubercular process going on at the same time in other organs.

Although fully realizing that one ought to speak with modesty on a subject requiring such careful and extensive clinical observation and pathological investigation, I hazard the assertion that true Addison's disease is simply a tuberculous manifestation. Just as laryngeal and mesenteric tuberculosis have their distinct and individual symptoms, masking those relating to lung-tissue similarly affected, so does what we may call tuberculosis of the suprarenal capsules have its constitutional symptoms and bronzing of the skin obscuring the coexistent lung trouble.

That this view is not a hasty conclusion or without solid basis, I will endeavor to prove. Of the thirty-seven cases related by Greenhow as typical, an analysis shows that 20 had indurations of lung, variable in size and character; 7 furnish no record of post-mortem lung conditions; 2 had mesenteric tuberculosis; 3 had old pleuritic adhesion; 5 only healthy lung.

The proportion of cases showing healthy lungs you will note is very small, about 177. This seems to me a clinical fact of great significance. I admit that we find very frequently at post-mortems nodules of small size and puckerings of lung-tissue in parties who were not suspected to have had tuberculosis while living. The twenty cases, however, present many grades of degeneration. But we have other data.

There is considerable resemblance of symptoms. The pulse, as we have already shown, is quite different. But we have the same indisposition to rise in temperature that characterizes chronic phthisis, and which leads Wunderlich to assert that its temperature changes are generally not significant. Yet in morbus Addisonii as in acute phthisis the temperature shows steep curves when there is activity of tissue change. The asthenia, though more profound, is similar, and subject, as in phthisis, to paroxysmal mode of progress. The cough, dyspnoea and palpitation are alike. The mind remains clear to the last, and death takes place by asthenia, as in phthisis.

The discoloration of the skin may be regarded as the special symptom, just as the excessive pain is characteristic of laryngeal phthisis, and the diarrhœa of mesenteric. Again, cancer, amyloid degeneration, suppuration, apoplexy or tumors of the suprarenal capsules, which may cause entire destruction of these organs, may exist without producing either the discoloration or the constitutional symptoms. What could show more clearly than this that aberration of function of the capsules is not alone sufficient to produce the phenomena of Addison's disease? We must have a special form of inflammation, and that is the tuberculous. There are thirty-six cases reported of suprarenal disease without bronzing of the skin; twenty-four of these are cancer of one or both capsules, and twelve miscellaneous (forms above mentioned). *Not one* instance, you will observe, of tuberculous degeneration without the characteristic bronzing is noted. Another clinical fact of significance is the existence in old cases of phthisis without Addison's disease, of a discoloration somewhat similar. I have already shown wherein it differs, but it is pertinent to remark here the resemblance in the smoothness of the skin and the situation of the pigment in the deep layers of the cuticle. In fact, although it does not deepen nor spread over the general surface with the progress of the malady, as does the bronzing of Addison's disease, it is a discoloration more closely allied in its clinical features than any other resembling form, such as is found in pregnancy, ptyriasis versicolor, hepatic or syphilitic disease.

Next we may assert that the explanation of the variable relation between the discoloration and the constitutional symptoms is

found in the supposition that Addison's disease is merely a part of a general tuberculous process. The constitutional symptoms which we have before the appearance of the discoloration are due to the general process. The discoloration which appears first simply shows that change in the capsule does not disturb the general system until the specific inflammation has its effect.

The pathological conditions of the capsules are those of tuberculosis of the caseous variety. We find an opaque yellow substance of the consistence of soft cheese. Sometimes we have portions of the capsule soft and broken down, like scrofulous abscess. Other cases present indurations of varying size, either free or imbedded in fat.

Again, we find the capsules puckered into small round masses, which contain a white, brittle, calcareous substance, or maybe there exists considerable enlargement, with cheesy or calcareous deposits. Some cases show enlargements, which when cut into are found to have a dull white surface, dotted over with small bright yellow spots.

Microscopic examinations of sections after hardening in chromic acid show:

1. Fibrous tissue in bands permeating the organ and displacing natural structures, especially towards the surface.

2. Crowds of small cells, like lymph-cells and nuclei, not arranged in definite groups or clusters, but irregularly distributed.

3. Fatty granules, some in circular clusters, others in streaks or patches.

4. Giant cells, with high refractive power and segmented nuclei.

We thus establish by a chain of evidence quite conclusive that Addison's disease is merely a striking form of the tuberculous process. Should this view be generally accepted it would detract nothing from the brilliant discovery made by Addison. The morbid condition now bearing his name will be always so marked that it will never be merged in a general process in such a manner as to destroy its individuality. The honor of the discovery will be as now justly awarded, and the incentive to investigation which the well-merited plaudits of scientific minds afford remain.

It is not within the scope of this paper to consider the treat-

ment. Suffice it to say that it follows, if my reasoning is correct, that the general regimen for tuberculosis will be required. I gave Phosphorus [30], because on noting the patient's symptoms, the remedy seemed well indicated. He was dark-complexioned, lean and of nervous temperament. The excessive prostration, dizziness, drowsiness and dry cough were sufficiently characteristic. As noted in the history, improvement followed its use. I sought of course to ascertain why the prescription of Gum guaiacum and Iodide potassium relieved so much. I believe it was because the former had many symptoms in its pathogenesis covering the disease.

To any one encountering this rare and fatal malady I would recommend the trial of phosphorus and gum guaiacum, with appropriate hygiene and dietetic treatment. I regret exceedingly that I had so short a period in which to make use of drugs, for I am fully persuaded that with careful application of homœopathic remedies, even such fatal affections as Addison's disease may be materially modified for the better.

LXXI.

DIABETES—THE THEORY OF ITS PRODUCTION, ETC.

By W. N. Griswold, M.D., San Francisco, Cal.

Diabetes has been placed by standard authors under the head of "Diseases of the Kidneys," because the saccharine condition and increased quantity of urine is its most marked and prominent symptom.

The evidences of disease in the kidney are exceedingly meagre; consisting of slight hypertrophy of the bloodvessels and urinary tubules, incident to an increased use of those vessels transmitting an abnormal quantity of water.

The meagre manifestation of disease in the kidney has directed the search of pathologists to other organs. Some standard authors have laid the blame upon the digestive organs. One says that instead of healthy and nutritive chyle, saccharine matter is prepared by the stomach, and enters the circulation. That which should be converted into muscle, fat, bone, and nerve, is hurried out of the system, as sugar, with the urine.

Another refers to a long list of writers, each of whom had, in his time, announced some hypothesis to account for the extraordinary phases of the disease; the more modern of whom, owing to the uneasy sensations of the stomach after eating, increased appetite, thirst, eructations, nausea, vomiting, bad taste, and dryness of the mouth and tongue, settled upon the belief that the digestive and assimilative organs were primarily at fault. Elaborate arguments were made to sustain the position, with

much show of plausibility; and yet the views expressed have been so indefinite that little satisfaction could be taken in them.

In their attempts to localize and ascertain the nature and cause of diabetes, it would seem that a prominent physiological fact had been, either accidentally or carelessly, overlooked; *i. e.*, the sugar-producing power of the *liver*. The main work of that organ being the production of bile and sugar, the latter function should, most certainly, have arrested the attention and invoked the investigation of the authors previously referred to.

In searching scientific literature, however, a large number of recent investigators and experimental students have been found following this most promising lead; and though they differ with each other materially, as to *conclusions* arrived at, they have brought to the surface a huge dump-pile of *facts*, which it is intended now to consider.

It is admitted that glycogen, consisting of $C^6H^{10}O^5$, is *normally* elaborated from the hydrocarbons and stored up by the liver.

Glycogen is subsequently transformed into sugar. Whether this *transformation* is a *normal process* is a disputed point. The general current of evidence is *in favor* of the proposition that it *is* a *normal* act; though some very thorough investigators assert that it is *not;* and furthermore, that the normal disposition of glycogen is into bile and *not* into sugar.

This dispute has arisen, no doubt, from the fact that sugar is produced in *increased* quantities in *diseased* conditions of the system.

The only ground for this dispute is a *partial view* taken by both sides. Let it be remembered that in every *healthy* system both *death-* and *life*-tending processes are *coexistent.* The formation of sugar—as will be hereafter more fully shown—is dependent on a *putrefactive* process and may be ranked among the *death-tending processes.* This furnishes a *pretext* for the assertion that it is an *abnormal* process; but it is readily shown, that though a *putrefactive* process, it is, *within limits*, a *normal* process.

The conflicting opinions of these equally able and assiduous investigators are thus *harmonized;* leaving little doubt that sugar formation by conversion of glycogen *is* a *normal* process.

A question has been raised whether some proportion of glycogen secreted is not transformed into fat, which assists in producing bile, but this question will not now be investigated.

Another fact is agreed upon; *i. e.*, that glycogen is a *product of secretion*, the agents being the hepatic cells, and that in greater or less quantities it is stored up in the liver. The next question raised, is: "By what means is it transformed into sugar?"

All agree upon the advent of a *ferment*. The introduction of a ferment among vital processes is a momentous proposition, tending to take the final change of *glycogen* into *sugar* from the *domain* of the *vital* and submit it to the action of the *chemical* force. It *seems* a proper step, for sugar and glycogen being composed of C. H. O. in different proportions, the latter is readily transformed into the former by *fermentation*.

The questions next discussed are: "*How* is the ferment produced? whence is it derived? *where* and *how* is it brought in contact with glycogen?"

Bernard assumes that an indefinite number of hepatic cells—the number determined by the demand and regulated by nervous influence—are employed in the elaboration of the ferment. He is sustained by others in this position.

This hypothesis is, however, inconsistent with a number of well-known facts. If the ferment is elaborated by the hepatic cells, *merely* an *increased action* of the cells would produce mellituria. This increased action, however, would involve excitation or hyperæmia, not only of the bloodvessels which supply the hepatic cells with material, but increased *action* and *power* in the general system. The malady would present the ordinary phases of a *sthenic* disease. But the symptoms of diabetes are *asthenic;* and it is impossible that the liver should be in a *sthenic* condition, while *asthenia* prevailed throughout the system.

Again, severance of the liver from its nerve centres, or withdrawal of nerve power, leads to *increased* production of sugar; whereas, if the appearance of sugar in the urine depended on an *increased* action of the hepatic cells, severance of that function from its *supporting nerve centres* should result in a *decreased* production. Bernard's *hypothesis* consists only with *unimpaired*

nervous centres and a *sthenic* condition of the system. Neither of these are present and the theory, as such, is untenable.

Ziemssen, Pavy, Dieffenbach and others, quite numerous, contend that the ferment is (or is *in*) the blood; but without very clearly defining the position in any way, assert that glycogen, being formed by the hepatic cells, "is transformed into grape-sugar by reaction with the blood which bathes the cells."

In evidence of this they adduce the facts, first, that glycogen treated with blood *outside the body* is changed into sugar, and second, that glycogen introduced into the *general* circulation increases *sugar* in the blood and causes it to appear in the urine.

The argument derived from the *first fact* is not competent, for as soon as blood drawn from the circulation comes to the oxygen of the air it begins *instantly* to change. Decomposition of the protein compounds sets in, and a *ferment* is formed, which immediately *begins* the transformation of glycogen into sugar. The conditions differ *widely* from those which exist *within* the blood-vessels. This, however, does not militate against the *probable existence* of a ferment of *some* power in circulating blood.

The *second fact*, indeed, *argues as much;* but though it may be *true* that a ferment in the blood reaches the glycogen elaborated in the hepatic cells by *bathing the walls of those cells*, the fact relied upon by Ziemssen, Pavy and others, does *not prove* it; for when glycogen is introduced into the *circulation*, it comes in *direct contact*—and not through the medium of the cell-wall—with whatever ferment may be present.

As establishing the position of Ziemssen, Pavy and others, the *two facts* relied on, though important in other connections, are valueless.

Another theory is that partly elaborated by Schiff and others. They aver that the ferment does *not* form in the blood until *after* death; *or* during life by some derangement, even retardation of the circulation; that *vaso-motor* derangements give rise to the formation of the ferment, and the consequent conversion of glycogen into sugar.

Though Ziemssen asserts that Pavy has disproved by certain experiments, the whole of Schiff's hypothesis, *modified*, *enlarged*, and *elucidated*, I incline to accept it, as *embracing more facts*,

and as being consistent with and supportive of other well-established principles.

Pavy *did* prove by experiments that all sorts of interference with the circulation did not, alone, produce mellituria, and it is probable (especially with both statements at hand) that derangements of the circulation will *never* produce mellituria *unless* connected with vaso-motor disturbances, and that the cases wherein Schiff found mellituria occasioned by derangements of the circulation were attended with some overlooked but important *disturbances* of the nervous system.

From what the ferment originates and how it is brought in communication with the glycogen may not now be settled to the *satisfaction of every one;* but that the abundant appearance of the *ferment* and of sugar in the urine depends upon *destruction or impairment* of nervous centres, resulting in a partial or complete suspension or isolation of *that power* in the nervous system which *co-ordinates* or *sustains* the sugar-making function in its normal action, and permitting the advent of an *abnormally excessive disintegrating process,* is proved, 1st, by observations after death, indicating a greatly increased growth of sugar in the liver; 2d, by experiments with different drugs; and 3d, by section, irritation, or injury of some of the nervous centres at the base of the brain. To elucidate and explain; 1st: Pavy, Marcet, Ritter and others found sugar in all parts of the blood in about equal amounts; also in the *dead* liver an amount of sugar *constantly increasing* up to a certain limit from the beginning of death, the limit being, probably, the exhaustion of the glycogen stored in the system before death. According to these observers a *dead* liver develops the requisite ferment more rapidly than when in full and active life. Increase of sugar in the liver *after* death is an important fact, as rendering it probable that sugar formation even in the living is *not* a vital so much as a *chemical* process. Recalling the process of fermentation will make the matter plain.

On the death of any organized body oxygenation immediately ensues. The tissues which soonest yield to decomposition are the *albuminoid.* Oxygenation of these protein (C. H. O. N.) compounds produces a *ferment,* which, by its catalytic power, sets in motion the decomposition of the hydrocarbons (C. H. O.).

Completed death is not necessary to induce oxygenation or the formation of a ferment, but a condition of the tissues and fluids *tending towards* or *bordering on* death, is required to favor ferment production in the living body. This condition is artificially induced in life, 1st, by the use of drugs which impair or destroy the power of the nervous centres, and 2d, by section of nerves which carry the necessary influence from the nervous centres to the organs. When there is a permanent cessation of all the vital functions it has been proved that ferment forms and sugar is produced the *most* rapidly, and the nearer the condition of the living system approaches that of permanent dissolution the more rapidly is the ferment formed and sugar produced.

2d. Those drugs which produce mellituria with much certainty are Curare, Chloride of carbon, Carbonic oxide, Nitrite of amyl, Nitro-benzol, Phos. ac., Terebinth, Merc. cor., and Nitrate of uranium. Injections also of Chloride of sodium and other soda salts into the *general* circulation, and ether, alcohol or ammonia into the *portal* vein will produce temporary mellituria. That most of these drugs produce mellituria by impairing the *power* of the nervous centres and thus inducing an *increased formation* of ferment, there can scarcely be a doubt, nor can it be seriously questioned that *drugs acting on nervous centres produce peripheral effects similar in character to injury or section of the nerves arising therefrom.* What those effects are will be more clearly seen in

3d. Experiments on certain portions of the spinal centres. It has been shown that sugar appears in the urine on section of the optic thalami and the great crura cerebri; on division of the spinal cord at the level of the second dorsal vertebræ; on destruction of the pons varolii, or middle or posterior crura cerebelli, or the spinal cord in its lumbar portion (sparing nerve connections with the liver). Section of the medulla oblongata (respiration being continued artificially), and injury or destruction of portions of the sympathetic nerve, have rendered the urine highly saccharine. *None* of the above experiments are effective, however, if the splanchnic nerves have been *previously divided.*

The result arrived at by these experiments on the nervous system are, 1st. That destruction or section of the spinal centres,

from the optic thalami to the lumbar portion of the cord, or "the lowermost cervical and uppermost thoracic ganglia of the sympathetic and of certain connecting filaments of the two, give rise to mellituria," probably by bringing into action a larger amount of *ferment* than is produced when the nervous centres and connections are unimpaired. 2d. That whatever effects may be produced by section or destruction of any part of the cerebro-spinal system, the impression on the sugar-producing function is conveyed through the splanchnic nerves.

It has now been shown *how* the ferment is produced, what machinery is employed therein, and what process is set in motion by contact of the ferment with glycogen. This has been done so fully that it remains merely to be stated (what may already have been inferred), 1st, that ferments in the living body are *composed* mainly of the various *products* (or results) of *decay*, sent back from the tissues through the lymphatics to the general circulation, and especially (in furtherance of sugar formation) of the "*red-blood corpuscles* which undoubtedly perish in the liver" and furnish abundant material for the ferment; and 2d, that the ferment thus formed and composed is present in the blood, and is *brought in contact with the glycogen in the hepatic cells* through *medium of the cell-walls*.

Facts heretofore introduced show, moreover, that impairment or destruction of the nervous forces by disease, injury, or section of nerves arising at the base of the brain is a *necessary* condition to the development of mellituria, that a diminution (not increase) of that nerve *power* which co-ordinates or regulates sugar production within the system is the *essence* or *bottom fact* of this disease, and that the diminution of nerve power acts in the production of diabetes by *decreasing* the nerve restraint upon and relegating the sugar-forming process untrammelled to the chemical forces, whereupon an excessive amount of ferment is elaborated and sugar abnormally increased.

Only *one*, but the most important view of diabetes, has been introduced.

A suggestion for treatment is to be found by referring to the drugs, before mentioned, which are said to have *produced* mellituria.

LXXII.

CLINICAL CASES, WITH REMARKS.

By C. Pearson, M.D., Washington, D. C.

I have no disposition to be critical or to urge objections to papers that have from time to time been presented to this Institute, and yet I have thought sometimes that many of them were less practical than they might have been, and that they partook too much of the style of a lecture from a professor to a class of medical students.

Now I take it that while we are, or ought to be, all learners, and therefore in a sense students, we are also peers; that you are physicians who have seen service as well as I; that you have experienced the romance as well as the reality of the profession, the former as a student, the latter as a practitioner, as well as I; that as Cassius said to Brutus, "You have fed as well, and you can endure the winter's cold as well." It would be invidious, then, in me to come before you with quotations from the books of your libraries that you can read as well as I; and yet, without this, what have I to offer? Must it all be original?—all the result of observation? This would probably make my paper much shorter, and in that particular it would have at least one merit. I will simply report a few cases treated, and give my reasons for the treatment.

INTERMITTENT FEVER.

Case 1. Thin, spare man, aged forty; weight, one hundred and forty pounds; complexion dark, bilious, sallow; habits very

regular and temperate; had not felt well for two or three days, as he supposed, from cold. Saw him September 6th, at one o'clock P.M., in bed, feeling chilly; no thirst; no pain, except in small of the back; pulse 85; tongue white, but slightly coated; very little appetite for two or three days; no nausea; bowels torpid. There was no one symptom pointing unerringly to the remedy, but the pain in the back, condition of the bowels, and feeling worse in the morning, directed my attention to Nux v., four powders of the 200th of which I directed to be given, three hours apart. Six hours later, he sent me word that he had had a chill which lasted two hours, and was then having high fever.

Not being fully satisfied that it would become periodical, the medicine was discontinued, and powders of sugar of milk only given every three hours during the next day. On the 8th, having heard nothing from him on the 7th, called again at one o'clock P.M.; found he had had a chill that morning, commencing at nine o'clock and lasting two hours, going off with bilious vomiting, which had continued at intervals through the fever; surface hot and dry; pulse 120; there was more of a coldness or chilliness than a shake; very little thirst at any time; pain in the back increased; some headache, though not violent; face pale; patient restless, changing his position every few minutes; was quite flighty, but little disposed to talk. These symptoms continued for some six hours, when profuse perspiration set in, and continued the greater part of the night.

Now for such a class of symptoms, what was the remedy? Two days before the patient had a chill; it commenced in the afternoon; this one began at nine in the morning. The excessive vomiting would indicate Ipecac.; the countenance denoted Verat.; the restlessness Arsen.; vomiting between chill and fever called for Eupat. perf., but this medicine has also vomiting of bile as the fever passes off; it has thirst before and during the chill and before the fever; cough the night before. This patient had none of these symptoms. It has "more shivering than the degree of coldness warrants;" the patient had not. The vomiting, instead of beginning or increasing at the termination of the fever, ceased more than an hour before the fever. I prescribed

four powders of the 200th of this medicine, one to be taken every two hours, commencing with the perspiration, and no more medicine for forty-eight hours, when the paroxysm again returned so slightly that a few powders of the c.m. prevented any further occurrence.

Now if there is anything of value attached to this case, it is that while there seemed to be as many symptoms of this medicine absent as present, as given in our works on Materia Medica, there was one which has never yet failed me, *vomiting as the chill passes off.*

I do not wish to be understood to say that this one symptom is all we need necessarily have of this medicine, or that we should have a Materia Medica with but one line to each drug, but I do mean to say that one line of a characteristic clinical symptom well remembered is better than ten pages carelessly read of doubtful provings.

CASE 2. Soon after this, and during the same month, was called to see a naval officer, about the same age (forty); heavy, stout build; round, full face; temperate habits. Found him, at one o'clock P.M., with very high fever, which he informed me had come on without chill the evening before, and continued for more than twenty hours; his pulse was full, 128; face dark red; excruciating frontal headache; no great thirst; no nausea or bowel derangement; in short, no other prominent symptoms. Gave Bryonia^{200} in solution, dessertspoonful every two hours till better, then at longer intervals. Called again in twenty-four hours; found him free from fever; pulse 75; had perspired freely during the night. Believed it to be an intermittent, and that the fever would, within forty-eight hours, again return, probably preceded by a chill. Gave placebos, and called again next day; found him still free from fever, but learned that he had been very nervous during the night, imagining robbers were in the house; would get out of bed, take his sword, and look for them from one room to another.

This symptom was so strongly indicative of Nat. mur., that I gave three powders of the 200th, to be taken three hours apart; but before he had taken the second powder, a chill came on,

lasting one hour, followed by fever, and that by perspiration. Thinking this might have been hastened by the medicine, no more was given, but another chill came on that afternoon, and and still another the next morning, at nine, and so continued for four days. There was nothing peculiar about the chills or fever; very little pain anywhere except in the head; thirst not great, but desire to have the water ice cold. The very few prominent symptoms made the selection of the proper remedy doubly difficult. The only peculiarity seemed to be the time of day, one day in the morning, the next in the afternoon. This is a characteristic of Eupat. purpureum, but not having it at the time above the 30th, I gave three powders of the 200th of Eupat. perf., to be taken three hours apart. The next morning he escaped both chill and fever, and on calling in the evening, found him at the table eating with a good appetite; he had been down town, and fancied himself well. In this he was mistaken, for the paroxysm only seemed to have been changed as to time; the one that was due that morning at nine did not come on till seven that evening, followed next morning at seven by another, and by still another at five o'clock in the afternoon of the same day. One powder of the 30th of Eupat. purp. was now given, and placebos every three hours, after which there was no return of either chill or fever. May we infer from this that there may be something in the *genus epidemicus?* These two varieties of the Eupatorium evidently belong to the same species. Will a remedy remove a train of symptoms one year that it will fail to improve the next? It is well known that when small-pox and scarlet fever are prevailing in a malignant form, other eruptive diseases partake more or less of their characteristics, and may not remedies be influenced by existing causes as well?

What these causes are, or the manner in which they act to develop disease in any given epidemic, is as obscure as the conjectures advanced from time to time in regard to them, and the directions given for their prevention. Thus, the cause assigned for diphtheria has been attributed to almost every conceivable thing, from filth and sewer-gas to the presence of house-plants, and yet this invisible, incomprehensible germ has hitherto escaped the observation of the chemist and the microscopist. It

prevails at all seasons, in the palace and in the hovel, in the cities and in the country, on the mountains and in the valleys, on the prairies and in the forests; and while it is undoubtedly a blood-disease, if anything is entitled to this appellation, a combination of causes and conditions are as necessary for its development as are heat, light, and moisture for the opening bud or the fragrant flower; hence its contagious nature has been greatly exaggerated.

I was recently called to prescribe for two sisters with this disease, one six the other eight years of age; the younger one had been somewhat indisposed for two or three days, but, notwithstanding she had eaten the day before *forty stewed oysters*. Saw her at 9 o'clock in the morning; found the throat very much inflamed, tongue heavily coated and dry to the tip, tonsils swollen, left one nearly covered by diphtheritic patch or ulcer, eyes dull and lustreless, voice hoarse and husky, pulse 120, no appetite or thirst, countenance pale and careworn, and, altogether, a discouraging case. Gave a powder of Sulph.^{cm} every two hours till four were taken; called again in eight hours, found little or no improvement, and regarded the situation as rather critical. I had had no experience with the Lac. canin., and never saw any proving of it, but had had much experience with most other remedies, high and low, and had sometimes seen them all fail where the malignancy appeared no greater; and having a few days before obtained this remedy in the 2^{m} attenuation from Dr. Swan, I prepared it in water, and directed a dessertspoonful to be given every two hours all night. It was a very agreeable surprise on calling next morning to find all the symptoms improved; the tongue was moist, the throat better, the pulse down to 95, the eyes bright, and the countenance lively; and with this medicine alone, repeated from three to twelve hours, she steadily improved until health was restored in a few days.

Finding the action so prompt in this case, I concluded to try the same medicine in the other, though the symptoms were not at all similar; in the latter case the right side was most affected, the fever not so high, and instead of the mouth being dry there was a constant profuse secretion of saliva; the tonsils were greatly enlarged, right one covered with diphtheritic patch, voice

hoarse, and articulation difficult. But here the remedy seemed to entirely fail, for after using it for thirty-six hours without any perceptible improvement, the patient was speedily cured by Lyc. 200.

Was this an evidence that this medicine acts, like Sulph. and Lach., on the left side of the throat, or shall we call it inert and say that the recovery in the first case was due to nature, or to the Sulph. previously administered? If we assume the latter, why not claim that the cure in the second case was due to this agent, and not to the Lycop., as it had been prescribed for some thirty-six hours before the latter medicine was given. To me the evidence appears sufficiently clear to justify me in prescribing it again for a similar class of symptoms, should they ever be met with in practice. It is better to follow a good than a bad precedent; it may be that some who might treat this agent with ridicule and contempt, would, were their patients to die under the administration of grain doses of Bichrom. of potass., Iodide of merc., or Chloride of lime, with an occasional gargle by way of variety, treat the next case with the same drugs, except, perhaps, to increase the size of the dose. Let us, then, not be too hasty in condemning this medicine, or in throwing it, like Macbeth, to the dogs.

EPILEPSY.

Patient, a girl, twelve years of age, had been troubled for five years with nervous spells at night, almost invariably after sleeping; would seem frightened, want to be held, and for the space of a minute or more remain in a kind of semi-conscious state; when rightly awake, appeared not to know anything she had said or done. Some nights she would have as many as six of these attacks, on others only one, but seldom passed a night without any. They did not seem to be more frequent in the fore or after part, but had for years always occurred at night, and after sleeping. They finally became harder, more resembling clonic spasms, and to return during the day, for which reason she was prohibited by the teacher from attending school. Her mental faculties were evidently impaired, or naturally unequally balanced; she was odd in her expressions, her looks, and gestures,

though her disposition was kind. The mouth was seldom closed; profuse lachrymal secretion as well as of saliva, the eyes nearly always suffused with tears; the teeth were prematurely decayed, and the case, altogether, presented a very discouraging aspect.

She was an only child. The father and mother appeared to be healthy, and could assign no cause whatever for the attacks. They had applied for a number of years to several different physicians, some of whom they supposed were homœopathic, but with little or no benefit.

The peculiar characteristic of the attacks *coming only in the night after sleeping*, directed me to Lach., the 2^{c} and 5^{m} of which were given, but no permanent improvement was noticed. Cina, Puls., Bell., and Gels. were also fairly tested, with variable success, when it occurred to me that this might be owing to some latent trouble in the system, which, for want of a better name, we will call *psora;* so on the 7th day of January last I gave her three powders of the cm. of Sulph., to be taken four hours apart. Improvement set in in two days, and the attacks did not return for four weeks, when, owing to eating some mince-pie, two slight spells returned, but no medicine was given, as I wished to let the Sulph. exhaust its action. For sixty-two days no medicine of any kind was given, when she took a few powders of Merc. 5^{c} for a cold and sore throat. During all this period, of nearly three months, she had only five light nervous spells, more like a fright than a convulsion; but on the nights of the 5th, 6th, and 7th of April, she had an attack each night; on the 8th, two more powders of Sulph.^{cm}, were again given, since which the paroxysms rarely return, and never unless brought on from overindulgence in indigestible food; the predisposition, however, is still there, and this even time may not eradicate.

Now there may be nothing particularly instructive about this case, or surprising that it should be relieved by so high a potency, but the wonder is that such a class of symptoms should be removed by Sulph., when so few of them appear in the provings. Shall we say if they are not found there they should be? This would not be favorably received by our writers on Materia Medica, and yet I am strongly inclined to the opinion that some of the most reliable symptoms published as pathogenetic are

wholly clinical. For instance, in Hering's *Condensed Materia Medica*, under the head of *Lycop.*, we read: "Pneumonia, with raising of mouthfuls of mucus at a time, of a light rust-color, stringy, and easily separated." Now what prover of this drug has ever noticed this? Where, indeed, did Dr. Hering find this symptom? It does not appear in any previous work on Materia Medica, but some two years before Dr. Hering's book was published, I stated in an article on pneumonia, published in the *Investigator*, that the keynote of Lycop., in pneumonia, was "raising whole mouthfuls of mucus at a time, of a light rust-color, stringy, and easily separated."

The language here, you will perceive, is the same, word for word. I do not say that Dr. Hering ever saw my article; perhaps he had noticed, as I had, this symptom cured by Lycop., and we casually described it in the same words. I am not very tenacious about knowing where the Doctor got it; it is enough for me to know that it is reliable; and yet, it does seem to me we should have some way to distinguish between a symptom cured and one produced by a drug.

Sulphur has epilepsy, with stiffness; child jumps, starts, and screams fearfully; wakens with a start and screams; but this child did no such thing; "worse in the morning, or after midnight," but this patient was no worse in the after than in the fore part of the night; "painful dryness of the eyeballs and lids," but in this case, there was profuse lachrymation most of the time.

If, then, it be asked, why Sulphur was given, I can only say that it being the great antipsoric remedy, and that so many children, like Gloucester, "come into the world half made up," we can, in chronic diseases at least, scarcely go amiss in prescribing it.

APPENDIX.

DISCUSSION.

SECOND DAY—MORNING SESSION.

DR. LEWIS BARNES, of Delaware, O. Mr. President: I wish to say a word about one of the cases reported here where the treatment was stated.

I was puzzled to know *what* cured in that case. The patient, it seems, was cured by some attenuation of Sulphur, while there were no symptoms in the case indicating Sulphur as it is laid down in the books. Now I wish to inquire by what principle or by what law the cure was made? Certainly not by the homœopathic law as we find it in our books, because the symptoms of the case cannot be found in the provings of Sulphur. What kind of a homœopathic report is that to bring here? You ask, then, "Why did the case get well?" I answer, that you *do not know* that it was on account of the Sulphur given. To illustrate: A lady once sent to me for medicine; she had a severe disease, but it would be heterodox to mention its name here, as only symptoms are admissible. She had severe sharp cutting pains in her chest, impeding respiration. I sent a medicine which I will not name, as it did no good. Within twenty-four hours she sent for me in great haste, as she felt no better. I found her in great suffering, and I at once threw out the medicine, and in a tumbler of clean water I prepared the same medicine. I then sat down beside her bed, taking one of her hands in mine, while I placed my other hand upon her forehead, and I began to talk as pleasantly as possible. In five or ten minutes her pain was gone, nor did it return that day or night. Now what cured that lady? It was simply the effect of mind upon matter and upon mind, and this effect was more powerful than medicine. It may have been the effect of mind that cured the Sulphur case and all the others. Our reports of cures are often very weak. Allow lawyers to argue on the point according to evidence, and you will find few cures proven. There is one thing that I like in these reports, and that is the absence of the usual blatant

formula about the patients going unsuccessfully through the hands of half a dozen other physicians, with which many of our reports are garnished.

DR. F. R. MCMANUS, of Baltimore. Mr. President: Some five or six years ago a gentleman came limping to my office, and said he had called on me simply to please his wife; that he had had lumbago for five years and had decided to take no more medicine. He was never easy except in clear weather. He had tried numerous doctors, but never a homœopathist. He had gone through the usual course of blistering and leeching, had used plasters, embrocations, etc., until finally, to please his wife, he came to me. After a careful study of the case I decided that Sulphur was the remedy, and I gave him one dose, which was followed by a daily powder of Saccharum lactis. He reported in four days, no better. I had given Sulphur 30, but I now gave two powders of the third.

In four days he returned and declaring himself no better, said he would take no more medicine, paid his bill and left. Six weeks later, while riding, I saw him walking upon the street and noticed that he did not limp; he asked me to walk with him, saying, "I've a great thing to tell you; I am cured of the lumbago!" He said that for three weeks he had had no pain, that he had taken nothing since taking my medicine, and was satisfied that he had recovered without medicine.

He said: "I was walking along one day about three weeks before, and suddenly discovered that I had no pain. I was thunderstruck! I bent forward and backward, but the pain was all gone. I went home and told my wife that after all I had done for my lumbago, it had at last vanished without medicine." I told him that I claimed the credit of the cure.

I state this case to do credit to the memory of Samuel Hahnemann, whose own child I claim to be in medicine, and to whom I give all the honor and credit.

I gave in eight days one dose of Sulphur 30th, and two of Sulphur 3d trituration, and the patient got well. I don't know whether he should thank me or not, but he followed my directions and got well. I was much interested in the case, and when, after the second prescription, he said he was no better, I might have been tempted to give another remedy; but I did not give it.

A few days before I left home I was called to one of the hotels to see a lady patient, a stranger, who was suffering intensely from a severe attack of bowel trouble. I gave her Mercurius vivus, and when I called that evening, finding her better, I gave no medicine. The next morning at three o'clock I was hastily summoned to her; she had been very ill all night, and had had

dejections every fifteen minutes through the night, with violent abdominal tormina. I gave a few powders of Mercurius corrosivus, and left Sac. lac. powders, to be dissolved in water and taken every half hour. I visited her at eight o'clock and could scarcely believe the evidence of my eyes, she was so much better. She said that the medicine in the water had cured her.

S. R. BECKWITH, M.D., of Cincinnati, insisted that those who called themselves homœopathists should adhere to that law of cure, and not cast doubts upon their medicaments when used in higher potencies than those in which the drug could be detected by the use of the microscope.

DR. C. PEARSON: I wish to say a few words in defence of my paper. I think, had Dr. Barnes heard the paper read, he would have entertained very different views regarding it. He should remember that the case of which he speaks was not reported to show you the symptoms or the remedies used, but merely to state that the only way to proceed in such cases was to do as I did. We have the symptoms of Sulphur in our Materia Medica, and it should remove similar symptoms in patients. I said that as this child had been treated unsuccessfully for years by myself and others, I thought that there might be some latent taint of psora in its system, and thus I thought that the great antipsoric remedy, Sulphur, might so prepare the system that other remedies would become efficacious. I then gave three powders of Swan's one-hundred-thousandth of Sulphur, and the child commenced to improve after the first powder, and had no more spasms for three months, although before that it had been having from one to twelve every day for five years.

Now, Mr. President, it is useless for any one to talk about mental impressions curing that child, for they certainly did not, neither did they produce any change in its condition, and yet men who use low attenuations declare such to be the case. It may be possible for Dr. Barnes to cure by "laying on of hands," but I claim no such mesmeric power.

DR. A. KORNDŒRFER, of Philadelphia. Mr. President: I am of the opinion that an unfair advantage is being taken in this Association regarding the high potencies, and it is not right to throw doubt so freely upon their efficacy without better authority. I could corroborate Dr. Pearson were it worth while to consume the time, by stating scores of cases occurring in my own practice and in my clinics where cases are presented subjected to the worst hygienic treatment possible, so that little can be done except by medicine.

The cases during Dr. Guernsey's clinics and since that time, prove it to be a fact that doses of a high potency given at long

intervals frequently cause positive cures, especially in chronic cases considered incurable by allopaths, eclectics, and low-potency homœopaths.

I have seen similar cases, and he who says he has not, has either had no experience with high potencies or has failed to study his Materia Medica so as to know how to apply them.

Now as to the reason why Sulphur should have cured that case. It is probable that Sulphur was the remedy; for although few of the symptoms of the case are to be found under Sulphur, yet as its provings have from eight to twelve thousand materially different symptoms, it is very probable that they covered the case.

There is no physician here who has used Sulphur to any extent in his practice, who does not know that after a case has for a long time resisted the seemingly homœopathic remedy, he is failing to cure because he forgets Hahnemann's teaching regarding reaction. We all know that the system does not react owing to the old "psoric" taint, and we know that the principal remedy for this condition is Sulphur. This fact we are all familiar with.

DR. BARNES: It seems due that we should hear all the remarks possible regarding this Sulphur question. Notwithstanding all the symptoms found under Sulphur, Dr. Pearson had a case in which none of those symptoms were found, and yet he gave Sulphur and claims to have cured the case. This is the point, that he did not prescribe according to the homœopathic law, and therefore by what law or principle did he prescribe, and how was the cure effected?

DR. PEARSON: I would correct the gentleman. I did not say that none of the patient's symptoms occurred under Sulphur. Dr. Korndœrfer has explained why I gave the Sulphur, and how and why it cured the case.

DR. BARNES: The Doctor gave Sulphur but not for the symptoms of the case. He thought the patient had latent "psora," and so gave Sulphur for that, and thus he doctored a name, and not a disease and its symptoms. He did not as Hahnemann instructed, prescribe for a "totality of symptoms."

DR. N. F. COOKE, of Chicago: Here comes the old question, which year after year is gradually converting this body into a debating club, where we simply show our smartness and win applause. I was surprised to hear Dr. Beckwith so earnestly advocate and defend the homœopathic principle and declaim in its favor. It is the easiest thing in the world to cast ridicule upon homœopathy. It began to be done long ago, and it has been continued to the present time by the old school; but I never

before heard so much ridicule cast upon it in the house of its friends. To what a point are we degenerating? I hope this question of high and low potencies will subside. Our *law* will remain a *law;* one member will use low potencies, another one high. We must hold and respect these differences of opinion. We are homœopathists and should understand our own law of cure, and that is enough for us. Let each one be allowed the utmost liberty of thought and action.

DR. H. C. ALLEN, of Detroit: At the close of the discussion on the papers of the Bureau of Materia Medica, yesterday afternoon, a statement was made that some members boasted that they were able to make more cures with high dilutions than others could with low dilutions. I do not wish to be thus quoted. I said that I can cure more cases with the higher than *I* can with lower potencies. I merely spoke for myself.

Many will not use the high potencies because homœopathy is not an "exact science," while others for the same reason will not use the low. Is there a greater difference between our high potency men and our low, than between the latter and our allopathic brethren? Regarding "exact science," while we all admit that mathematics is peculiarly exact, how many members present can from this platform demonstrate the higher propositions of Newton's Principia? And yet none of us dispute their truth! We know that the sun is ninety-five millions of miles from the earth, not because we have measured it, but because we take some one's word for it. How do we know that Newton's problems are correct? Simply because we have faith for it. Is it not the same in all "exact sciences?"

Our system of medicine is founded on facts and not on theories; we build our theories from our facts. It is a fact *to me* that the higher potencies cure disease; it may not be a fact to others, but they should not deny my proposition.

On motion the discussion was closed.

SECTION IV.

REPORT

OF THE

BUREAU OF OBSTETRICS,

J. F. COOPER, M.D.,	Allegheny, Pa.
J. H. WOODBURY, M.D.,	Boston.
R. T. SPEAKMAN, M.D.,	Battle Creek, Mich.
C. P. SEIP, M.D.,	Pittsburg, Pa.
C. W. BREYFOGLE, M.D.,	San José, Cal.
W. N. GUERNSEY, M.D.,	New York.
W. H. HUNT, M.D.,	Covington, Ky.
CORNELIUS ORMES, M.D.,	Jamestown, N. Y.
O. B. GAUSE, M.D.,	Philadelphia.
J. C. SANDERS, M.D.,	Cleveland.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 11.

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LIV.

THE CAUSES OF PUERPERAL ECLAMPSIA.

By Rachel T. Speakman, M.D., Battle Creek, Mich.

Of the many obscure questions claiming the physician's attention, few are less clearly understood than the one under consideration, and inquiry into these causes leads through labyrinths of research, in which doubts and disagreements are much more prevalent than well-authenticated facts.

Teachers and writers in treating the subject divide the causes into two general classes, which they designate as centric or proximate and eccentric or remote. The first includes those that induce convulsions by direct irritation to the nervous centres. The second those that are more external, and their influence reflected.

The centric causes may be either physical or psychical. The physical acting upon the brain and its membranes, and upon the spinal cord and its membranes, and termed intracranial and intravertebral causes.

The psychical are those acting upon the emotional portion of the organism.

The eccentric causes are those which excite and irritate the incident nerves.

Prominent among the first causes are sanguineous derangements, such as blood-clots, serous effusions, etc.; anything producing immediate pressure upon the brain and its appendages; or, on the contrary, anything that removes the normal pressure, as does severe uterine hæmorrhage.

First and most frequent among the second causes are such conditions as directly irritate the uterus and its surroundings,

among which are pressure of the presenting part of the child, change of its position in the early stage of parturition, overdistension of the uterus by internal abnormal growths, or the presence of two or more fœtuses, an unnatural amount of amniotic fluid, large quantities of hardened fecal matter, etc. These and numerous like conditions are familiarly cited as causing puerperal eclampsia.

But why blood-clots in the brain or spine, why chemical poisons in the blood, why a sense of shame, a disturbing look, an emotion of grief or thrill of joy, should produce these alarming and often fatal convulsions, are questions awaiting clearer solution.

Why moral and mental emotions, etc., produce local congestion sufficient to induce them, involves a more intimate acquaintance with the process of nervous operation than has yet been attained. Many and ingenious are the explanations advanced and accepted, but on close examination they all reveal more theoretical than positive knowledge.

Since no convulsive action can be produced without irritation of the motor apparatus of the nervous system, it must be through an understanding of the mechanism of that, that we can hope to arrive at anything like a correct solution of the nature of these phenomena. In view of this the motor tract, with its contained hemispheres, corpora striata, cerebellum, pons varolii, and medulla, as well as the cells found in the gray matter of the spinal cord on its anterior portion, claim close study, but involve too lengthy detail for presentation here.

Herman Nothnagel, in his extended experiments on the nervous system, has demonstrated the existence of a "special convulsive centre," situated in the pons, and found (Erb thinks) in that portion where the motor nerves of the antero-lateral column first terminate in ganglion cells. Irritation, direct or indirect, of this circumscribed spot, gives rise to convulsions of an epileptiform type. Extreme anæmia of this convulsive centre is also considered by Erb a cause of widely-extended and violent convulsions.

The possibility of sometimes causing epileptic seizures by pressure on certain portions of the body, leads to the inquiry,

whether eclampsia may not also be so caused in some cases. The existence of pressure-points, so clearly proven by the experiments of Von Graefe and Hitzig, make it plausible at least. If pressure at points as distant as the vertebral column and joints of the wrists and hands will cause or prevent convulsions, why not reasonably infer the uterus a most important pressure-point during the parturient period, and the unavoidable pressure attending labor as sometimes cause in itself sufficient to induce puerperal convulsions?

The eclamptic seizures during gestation, uncomplicated with kidney affections, are thought by Wernich to be caused by pressure of the enlarged uterus upon the sciatic nerve. Claiming that this pressure may cause, as does injury of the same nerve in the Guinea pig, increased irritability in the pons and medulla, and that if to this irritability is added irritation of the sensory nerves of the sexual organs, these convulsions result.

Increased motor activity is the general accompaniment of all convulsive action, hence any mechanical or other stimuli, calculated to provoke greater activity of this system of nerves, may, under certain conditions, induce eclampsia.

Prof. Braun claims that "eclampsia is an acute affection of the motor functions of the nervous system, and occurs only as a phenomenon of some other disease, which, under certain conditions, propagates its toxæmic effects on the brain and nervous system," and pronounces Bright's disease of the kidneys the one most frequently giving rise to "these frightful accidents." But, unless albuminuria had been detected before gestation, we could not be positive that the patient was suffering from Bright's disease in some of its stages, any more than would be the case in convulsions arising from albuminuria in scarlet fever. In both instances the renal disturbance may be only temporary, and the speedy return of the kidneys to normal, healthful action, almost precludes the idea of the presence of that disease.

Dr. Hodges, after large experience and thorough investigation, does not hesitate to say there is no essential pathological difference between the usual form of puerperal convulsions and those of a hysterical type occurring in the non-pregnant state, and thinks the only difference is in the degree of congestion. Other

able investigators take the ground that the pathological condition of all convulsions is the same, and that "eclampsia is only an acute form of epilepsy."

If these three forms of convulsions are one and the same, except in degree of congestion, may it not be quite possible that, in woman's mode of dress, exists a cause for many of the convulsions with which we meet during the gestative and parturient periods?

VASCULAR CONGESTION OF THE KIDNEYS.

One great source of albuminuria, that most popularly accepted cause of puerperal convulsions, if induced by pressure of the gravid uterus upon these organs, must be greatly increased by a style of dress that calls for from three to five more thicknesses of clothing over this region of the body than is worn over the extremities; and the still further addition of an unwieldy corset, always stiff and mostly tight, increases the trouble by overheating and unduly compressing all of that portion of the body in which, as it were, the very engines of congestion are located.

This pressure, interfering with the free return of the venous blood from the kidneys, gives the urine less than its normal amount of urea, and the blood is freighted with an excess. This pressure on the thoracic and abdominal viscera interferes with the proper oxidation of the blood at a time when the eliminating organs are called upon to perform extra duty; for, in addition to eliminating the debris of the maternal system, they have that of the fœtus; thus is thrown into the circulation an amount of effete and poisonous matter, enough, with other deranged conditions, to induce convulsions.

In pregnancy, even when natural, the condition of the blood is not identical with that of the non-pregnant state. The increase of the number of white corpuscles renders smaller the proportion between these red and white constituents of the blood, which is one of the essential characteristics in anæmia. This alteration produces changes in the nutritive processes which result in added irritability of the nervous system, rendering it more excitable, and "emotional excitability," Dr. Barnes maintains, "measures convulsive liability."

Another condition of gestation is increased frequency and force of the heart-beats, resulting in consequence of the pressure made upon the abdominal aorta and its pelvic divisions by the growing contents of the uterus.

This frequency and force are greatly aggravated by the undue pressure exerted by tight-dressing, and its continuance results in cerebral arterial tension; another condition giving rise to these convulsions.

How much influence such pressure may have upon the "pressure-points" so frequently spoken of by Erb, Hitzig, Von Graefe, and others, is not yet demonstrated; but with a convulsive centre, and these points as important pivotal facts, may we not reasonably hope for more definite knowledge regarding the causes of these convulsions,—convulsions so terrible in their manifestations as to cause the brave and hopeful Dr. H. N. Guernsey to say they were the only thing connected with his profession that ever made him regret being a physician,—a feeling in which all must sympathize who have any conception of that with which they have to contend when called to a patient suffering an attack of eclampsia, and around the causes of which cluster so much doubt and disagreement that all must acknowledge, in relation to them, "the book of revelation is not yet finished."

LV.

THE PATHOLOGY OF PUERPERAL ECLAMPSIA.

By J. H. Woodbury, M.D., Boston.

The pathology of this disease is not clearly settled, nor indeed fully understood. Many theories have been advanced, and many explanations of its phenomena offered, but all have proved insufficient and faulty. Attempts have been made to divide these cases into classes according to their supposed causes. Thus we have had the apoplectic, the epileptic, the hysterical and the uræmic, as one set of classes, and a very common division has been into two classes, the hysterical and the uræmic. This arrangement met the approval probably of a larger number of physicians than perhaps any other, on account of its simplicity and comprehensiveness.

Its incorrectness, however, was discovered when several of the purely hysterical cases died and lesions of the brain were discovered at the autopsies. The researches of the last twenty years, while they have failed to fully elucidate the pathology, or indeed the etiology, of puerperal convulsions, have done much to disabuse our minds of former errors. It is now a well-settled fact that convulsions, identical in their character and symptoms, are caused or at least associated with very different anatomical lesions, and also without the existence of any lesions at all, except as the general system may be modified by the existence of pregnancy.

For many years the following points seemed to be well established and generally accepted:

1st. That a very large proportion of these cases result from toxæmia.

2d. That these patients are usually sufferers from Bright's disease or albuminuria.

3d. That in these cases the urea is retained in the blood, and either directly or by decomposition a poison is produced sufficiently powerful to make a most profound impression on the brain and nervous system, thus causing the convulsions. Carl Brown, of Vienna, while assenting to these general propositions, also suggested that the active agent in the production of the uræmic intoxication was the carbonate of ammonia in the blood, and that this was the result of the decomposition of the urea; but this suggestion has not stood the test of subsequent investigations. That convulsions are generally associated with albuminuria, and that excess of urea in the blood is an active poison capable of affecting the brain and nervous system, are now universally accepted facts; but that these conditions are the cause of the convulsions may well be questioned in the light of the following facts, which careful investigations have also demonstrated:

1st. That there are many cases of convulsions, attended with all its peculiar symptoms and phenomena, in which there are no indications of any lesion of the kidneys or other serious affection of these organs, neither albumen nor casts being found in the urine; and even in fatal cases, only a slight congestion of these organs has been found, which might readily have been produced by the violence of the convulsions.

2d. A large number of cases of albuminuria during pregnancy occur without being followed by convulsions.

3d. Albumen has been found in the urine after convulsions have occurred, when the most careful examinations have failed to discover it before.

It has also been further shown that the albumen of albuminuria has not the same composition as the albumen of the blood, and also that the albumen of albuminuria of pregnancy differs essentially from that of Bright's disease, as is shown by its chemical reaction, and that albuminuria may be produced by a great variety of causes entirely dissociated from pregnancy.

In view of these facts, the inquiry became pertinent, "Whether the same profound impression on the spinal system, which in the pregnant and puerperal woman culminates in puerperal convulsions, may not also so modify the function of the kidneys as to result in albuminuria? or, in other words, instead of regarding the albuminuria as the cause of the convulsions, is there not some reason to believe that both are the result of some common cause, the exact nature of which is not yet determined?"

It is the opinion of leading pathologists who have devoted the greatest attention to this subject, that after conceding that in a certain portion of these cases the urea may be the exciting cause, still, that the primary starting-point is in the nervous system, and that the changes observed in the kidneys of women dying from convulsions are too trivial and transitory to indicate a long-continued congestion; and the same may be said of the cerebral changes, where is often found in puerperal convulsions simply an intense congestion or serous effusion instead of an overwhelming of the brain by the poison of Bright's disease. In the main, this view is concurred in by Rosenstein of Berlin (*Die Pathologie und Therapie der Nieuen-Krankheiten*, 1863), J. Braxton Hicks, of London, Frankenhausen, of Jena, Tyler Smith, of London, and Fordyce Barker, of New York.

LVI.

THE PROGNOSIS OF PUERPERAL ECLAMPSIA.

By J. C. Sanders, M.D., Cleveland, Ohio.

There is a comparative prognosis of great value in eclampsia, according as it occurs in the gestative, parturient, or lying-in states.

It is most favorable when the malady occurs in the parturient state and when it assails the second stage well advanced. This is the time of maximum favorableness of prognosis.

This favorableness of prognosis diminishes inversely as we trace the labor process in both directions of time, growing less and less favorable as we follow the labor back through the first stage to its inception, even to the time of completed gestation, and as we trace it forward on through the third stage into the lying-in, where we reach the time of maximum unfavorableness or greatest danger.

So far as concerns the gestative period alone, the time of its near or full completion is the time of the most favorable prognosis. This maximum favorableness of prognosis in the gestative period diminishes inversely with the degree of advance, culminating in greatest peril at the time when the gestation is first liable to attack, which is rarely earlier than the completed third month.

In brief, there are two points of extreme danger, namely, the earliest and the latest periods of its possible occurrence, and two points of comparative favorableness of prognosis, namely, one in the gestative period, and this at or near its close, and one in the parturient state, and this in the second stage, when well advanced.

There is a prognosis derivable from and varying with the proximate causes of the malady.

If the morbid impressibility of the spinal centre, or the medulla oblongata, or the corpora quadrigemina, one of these, or all of these combined, which impressibility is the *sine qua non* to the occurrence of this affection, is the product of grave or long-continued blood-impoverishment through depletion or faulty nutrition, or of blood depravation through defective elimination or poisoning, as in anæmia, the varied dyscrasiæ, or uræmia, or the so-called plethora, the prognosis is most grave. If, on the contrary, the blood is but lightly or transiently affected, the prognosis may be regarded in general terms as favorable.

There is a prognosis predicable of the varying intensity and duration of the exciting cause or causes.

In case the exciting cause or causes are capable of immediate removal or abatement, as, for an instance, an over-engorged stomach by an injudicious meal of food or luxury, an impacted bowel or rectum, a distended bladder, furious intensity of a labor-pain, faulty decubitus or position, or a noisy, crowded, ill-ventilated room, the prognosis is relatively favorable. On the other hand, if the exciting cause or causes must inevitably operate more or less permanently in the case, with all the skill it may be possible to bestow, as, for instance, the presence *per se* of the embryo or fœtus in utero, impressing as a foreign body an irritated and. overwrought utero-ovaric nerve tract, labor not yet declared, or declared and the os margin rigid and undilatable, the prognosis is most serious, and can be measured only by the possibility of an early delivery.

There is a prognosis predicable of the objective symptoms in each individual case.

1st. The severity of the paroxysm.

As these have a wide range, they require careful study to determine their full significance. There are two factors which, like the barometer and thermometer in meteorology, will measure very accurately the degree of danger. These are the condition of the brain and the state of the general strength.

In case the loss of consciousness is only gradually declared, nor become so profound but that faint glimmerings may be traced

in the intervals, incident to mechanical irritation of the skin by pinching, or to a vaginal examination, or to a uterine contraction, or to the use of an injecting-pipe, or by calling her by name with a high pitch of voice, and quickly after a paroxysm the stertor lapses into restful ordinary sleep, though she is not capable of being fully roused, and if she retains the power of deglutition, or vocalization, though incoherent, and especially if the pulse and temperature keep within the range normal to such violent physical effort as is involved in the repeated convulsions, all unmistakably indicating that the brain is experiencing no imperilling engorgement, or giving way of structure, or exhaustion, or the kindlings of inflammation, the prognosis must be regarded hopeful. When, with this favoring condition of the brain, there is maintained a fair degree of general nerve energy and muscular strength, the muscles keep round and feel firm, and there is but little settling or sinking down in bed, expressed by the term decubitus, and in the intervals the respiratory muscles act equably and lift the ribs full up, and the tonicity of the sphincters of rectum and bladder is retained, a most hopeful prognosis may be rationally entertained.

On the other hand, in case the consciousness becomes quickly and wholly obliterated, the coma so profound nothing can rouse her, and a heavy stertor rests upon the respiration from one seizure to another, and her color grows more and more cyanotic, her pupils become unequal and lose their contractility, her pulse frequent, irregular, or slow and intermittent, her temperature unequal, cold feet and hands, head hot, and the thermometer shows abnormal exaltation and increase of blood-heat; then, as we survey the general nerve and muscular centres, we find traces of increasing exhaustion, though tardily unfolded, the muscles losing their roundness and firmness, the chest morbidly collapsed and the breathing largely abdominal, deglutition impossible, the sphincters relaxed, urine suppressed, posture in complete decubitus, hæmiplegia, or, what is sometimes observed, an uncontrollable restlessness supervenes, a wild tossing of the arms and limbs and even of the body, our prognosis is wellnigh hopeless. Indeed, this last symptom I have never seen in eclampsia, follow-

ing in the train of other grave symptoms, where the patient did not soon die.

2d. The frequency of the recurring paroxysms.

Each paroxysm is like a severe blow, and though it may not break down any molecule, or cell, or capillary, it consumes, by its resultant shock and expenditure of muscular and nervous energy, a certain degree of vital resistance. This consumption of power goes on, not *pari passu* with the repetition of the attacks, but with an accumulative force; each paroxysm taking away more and more of the resistance. If, therefore, they occur widely apart, giving thereby opportunity to the nervous and muscular spheres to rest and recuperate, they furnish an element of hopefulness, unless the severity of the paroxysms, when they recur, more than overbalance this advantage. On the other hand, if the paroxysms recur at brief intervals, as they sometimes do, scarcely affording any time for recovery from their entailed shock and exhaustion, the prognosis is correspondingly rendered adverse.

3d. The duration of the malady.

Though any individual case may present great severity of paroxysms, and these recur with great frequency, yet, if they may be limited in number, all other things equal, the prognosis is thereby made more favorable. Whereas, if, through a continuance of the causative conditions, the malady persists any great length of time, the prognosis becomes correspondingly grave. There is a limit, mercifully bestowed upon our mortal bodies, of endurance of so terrible assaults of disease as these paroxysms of eclampsia, and though in their protracted recurrence the brain escapes any appreciable breaking down of its integrity of structure, yet shock and exhaustion are sufficiently potent, and will sooner or later, if unstayed or uncontrolled, destroy life and close the appalling scene.

APPENDIX.

DISCUSSION.

SECOND DAY—AFTERNOON SESSION.

DR. H. N. GUERNSEY, of Philadelphia: Mr. President, I really do not look upon this grave disease, eclampsia, with so much fear and trembling as one might suppose. Dr. Sanders's paper was very interesting. I have seen a great deal of this affection, and my success in treating it has been very satisfactory in any stage, either before the completion of pregnancy, just before parturition, during or after it. The only successful treatment consists in deciding on and giving the appropriate remedy at infrequent intervals and in a high potency. My first case I was called to in the middle of the night, thirty years ago. The first symptom of approaching confinement was a severe convulsion, and when I reached the house, some three or four miles distant, there was no hope, nothing did her any good. All my other cases from that day to this, in which I was called in the beginning, I have never failed to cure.

I will hastily speak of the remedies I use. I have given but a few lines of indications in my writings for the following:

Arnica, Belladonna, Hyoscyamus, Argentum nitric., Cuprum, Lycopodium, Ignatia, etc. Now, really, gentlemen, I am as much at home with my remedies in this disease as my friends the surgeons are in their specialties. This has been doubted here, but I know that I cured. While a lengthy discussion is not desirable, I wish to encourage those who practice homœopathy to adhere firmly and persistently to its principles, to dare to give the single remedy, and allow time for it to act.

I have cured most cases with Belladonna, of which I usually use the 41^{m} potency.

DR. BAILEY, of Detroit, Mich.: I would like to ask Dr. Guernsey if he were called to a case and found the rectum distended with fecal matter and the bladder also enormously distended, he would

give a single remedy in the 41 or 42^{m}, and then sit down and wait for it to take effect?

DR. GUERNSEY: That would be the same thing as being called to a case of fractured limb or dislocation, and expecting to set it with a powder of the forty thousandth. I have had that senseless notion thrown in my face before.

DR. BAILEY: I thank the gentleman for his answer. I got that idea, and I believe nine-tenths of the members did, from his remarks.

DR. GUERNSEY: Of course if there is a mechanical obstruction it must be removed at once. I would, of course, in such a case draw the urine and relieve the distension of the bladder, and thus I would relieve all difficulties taking rise from a mechanical cause, and I beg to here deny the assertion that I would not.

DR. BAILEY: I am pleased to learn that such diseases can be treated with the highest attenuations. We must all live and learn, and that is our object in coming here, and while this is one of the greatest things I have ever learned, I still have my doubts about it. I have in my practice had very few cases of the trouble; with them I have used low potencies; that is, from the sixth to the thirtieth. I have not reached the remedies prepared by letting water run through a small vial for six days. I hope I may some time be convinced of their efficacy. The doctor who read the first paper spoke of using from the first to the fourth decimal, while Dr. Guernsey treats his cases with the forty-first thousandth. If we can cure disease equally well with either high or low potencies so much the better. I liked Dr. Sanders's paper. I think it is our first duty to remove obstructions, and the sooner this measure is resorted to the better it will be for the patient.

We have a number of ladies present competent to speak or write on this subject, from whom we have not heard a word; why can we not hear from them?

DR. W. C. BARBER, of Waukegan, Ill.: I am much interested in this discussion. My first case of eclampsia the friends got frightened about, and calling an allopath in consultation, my patient, although in convulsions, sank into a comatose state, which lasted about three days, and then she died.

The cases I have since had I have managed myself. When the convulsions were in the form of hysteria, Ignatia always relieved. When there was a lack of uterine excitement, I would hasten the delivery with forceps. When there was great excitement, when after-pains had come on, and the pain suddenly left the uterus and went to the head, with a twitching of the eyes and an approach to convulsions, I used Secale, always suc-

cessfully. I have never seen the apoplectic form of convulsions.

THE PRESIDENT: I like the suggestion about hearing from the ladies. The courtesy can be extended to them of allowing them to speak from where they sit, if they feel a delicacy about coming to the platform.

DR. C. PEARSON, of Washington, D. C.: I heard but imperfectly the remarks of Dr. Ormes, but if I heard his prescriptions correctly my idea was, when he sat down, that he had read a very good allopathic paper. I respect the doctor and wish to say nothing to hurt his feelings, but I must say his paper was peculiar as a homœopathic production. I understood him to say that he gave Belladonna and Aconite in eclampsia from the first to the third. I suppose he alternated these with Veratrum viride. I understood him to recommend chloroform and bleeding. That treatment is not new, for it was practiced very many years ago; almost any physician at that time would have done the same thing. I protest against such reports. I did not hear what became of the patient. Did she recover, doctor?

DR. ORMES: To which one do you refer?

DR. PEARSON: The women you treated by bleeding, etc., under the homœopathic practice.

DR. ORMES: That was when I was an allopathic physician.

DR. PEARSON: I beg your pardon, I thought it was homœopathic treatment.

DR. ORMES: I will explain. I first commenced to practice medicine as an allopath. The first thing after seeing the patient was to bleed, and the case I was describing I bled freely. That was on Monday morning; on Wednesday she appeared a little better; on Thursday she became conscious. I gave the allopathic treatment according to Dewees, and the patient made a good recovery.

DR. PEARSON: I beg the doctor's pardon. I am glad to correct a misstatement, but I certainly understand that when he comes to this Institute as a homœopath, he should not give us allopathic treatment, as he has in these cases. I protest against it.

DR. ORMES: I used the Veratrum viride when I was an allopath, but I have used it since I became a homœopath.

DR. PEARSON: I cannot understand how the doctor used it.

DR. WILLIAM GALLUPE, of Bangor, Maine. These cases of puerperal convulsions are cases of emergency and very unpleasant; something must be done at once for the sufferer.

I have not had a great many cases, but such as I have seen have got well after one or two doses of a single remedy.

I once drove very quickly for five miles to see a case, and it

was the worst I ever saw; the symptoms were very serious. I gave a dose of Stramonium, but the convulsions continued for half an hour very severely, and it did not seem to relieve her. I thought over the remedy. I watched the pains, and I became satisfied that I had given the right medicine. I soon saw a little relief, and within the next half hour she recovered consciousness and told her own story: she had been unconscious for ten hours.

DR. MCMANUS: What was the attenuation?

DR. GALLUPE: I gave her the thirtieth. I was sent for to see another case; got there at one o'clock at night and found the patient having a very severe spasm; she had been in spasms for more than twenty-four hours. She had been under the care of a homœopathist all the morning, and later some allopathist had been called. The allopath said if she were not bled she would die, but that bleeding would save her; the homœopath said it would not. I was told that at one o'clock the previous afternoon she became conscious for a few minutes, but that she soon relapsed and had been unconscious since. I gave her a dose of Stramonium; all stood around, expecting that she would die. I sat down by her bed, and in half an hour I saw a mitigation of the symptoms; the improvement continued; she opened her eyes and looked up; the spasms returned, but soon stopped, and she got well.

DR. L. E. OBER, of La Crosse, Wis.: Did the doctor in this case use any psychological influence?

DR. GALLUPE: Nothing but the remedies I put on the tongue.

DR. PEARSON: He could not while she was unconscious.

DR. OBER: There is a way in which it could be exercised.

DR. GALLUPE: I believe I have cured a case in that way.

A MEMBER: What were the characteristic indications for Stramonium in these two cases?

DR. GALLUPE: I cannot give them now. I at the time recognized Stramonium symptoms, but the cases occurred several years ago. I merely mention the latter case because four allopathist and a homœopathist had worked over it all the afternoon and declared it hopeless. The husband said she should not be bled, and the allopathist said she would die if she were not.

DR. MCMANUS: I dislike to cause any ill feeling, but the remarks of Dr. Gallupe coincide so perfectly with my experience in the use of homœopathic medicine, that I am disposed to admit all he said to be true and to sustain him in the efficiency of his treatment. My friend Dr. Ober thinks the cases were astounding and important, especially the success of the treatment, and asks him if there was anything psychological about it; now there is a secret about his success which I can perfectly understand.

DR. OBER: I did not speak to criticize, but only for information.

DR. MCMANUS: That is all right, I have done the same. These results are not extraordinary in the practice of homœopathy.

Dr. Gallupe uses the smallest possible amount of medicine to cure a very grave disease, and it takes but this small quantity; when he has the right remedy, it matters little how small it is. I believe it makes little difference whether we use the sixtieth or the fortieth thousandth, but if there is anything in the size of the dose we should consider it as an important matter.

We should in these cases avoid alarming the patient and friends, but should select and give the appropriate remedy with confidence.

DR. T. MOORE, of Germantown, Philadelphia: Mr. President: I should like to relate a case. I was called to a lady and found her in convulsions. She was seven months pregnant, and when I saw her was having a very violent convulsion; her face was red, her eyes suffused, turned up, and closed; there were constant jerkings and twitchings of the body and limbs. It seemed a Belladonna case, and I prescribed the two-hundredth in water, a dose every five minutes.

I was informed that the family physician was an allopathic professor in the city, and I said I would be glad to relinquish the case in his favor; he had been, in the meantime, sent for. I went away, and on my return found him there, and upon my offering to turn the case over to him, he refused to take it unless I would remain and consult with him. I consented, he making the condition that he be allowed to prescribe some remedies.

I was glad to know their treatment in such a case. He gave the Hydrate of chloral and some other remedy, I think the Bromide of potassium. I wrote the prescription for him and sent for the medicine. We waited. My Belladonna had not relieved.

The allopathic prescription did no good; she seemed to get worse. We tried all the means possible to relieve; we then unsuccessfully endeavored to dilate the os uteri with the Barnes dilators, the forceps, and our fingers; we could only introduce one finger. We tried an enema, and then, at the suggestion of the doctor, we applied Belladonna ointment to the neck of the uterus. All was of no avail; she grew rapidly worse. At nine o'clock in the morning, after having worked all night, the professor declared the woman would die, and that as he had patients to see he could remain no longer. He said I would be justified in doing anything, and I thought of the Cæsarean section, but I decided to rely once more on homœopathy.

He left the case for good, and I prepared the forty-thousandth of Belladonna in water and gave it every five minutes, beginning at precisely nine o'clock in the morning. The convulsions ceased promptly, the labor pains came on well, the mucous secretions increased. On making an examination I found the os dilated without any mechanical means. It may have been the effect of the Belladonna on the uterus, but I do not know. At half past six, after a steady labor, the child was born. The woman remained in a comatose state until five o'clock in the afternoon, but she finally recovered.

On motion the discussion was closed.

SECTION V.

REPORT

OF THE

BUREAU OF SURGERY,

J. H. McCLELLAND, M.D.,	Pittsburg.
E. C. FRANKLIN, M.D.,	St. Louis.
S. R. BECKWITH, M.D.,	Cincinnati.
L. H. WILLARD, M.D.,	Allegheny, Pa.
GEORGE A. HALL, M.D.,	Chicago.
WILLIAM TOD HELMUTH, M.D.,	New York.
H. F. BIGGAR, M.D.,	Cleveland.
N. SCHNEIDER, M.D.,	Cleveland.
JOHN E. JAMES, M.D.,	Philadelphia.
J. G. GILCHRIST, M.D.,	Detroit, Mich.
M. O. TERRY, M.D.,	Utica, N. Y.

TO THE

THIRTY-FIRST SESSION

OF THE

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XXIII.

TUMORS; THEIR NATURE AND RELATION TO THE GENERAL ORGANISM.

By J. H. McClelland, M.D., Pittsburg, Pa.

As introductory to a consideration of tumors in detail, which I will have the honor of presenting at the hands of my colleagues, this paper will be devoted briefly to some general observations applicable to the subject at large.

Definition.—As containing the pith and marrow of tumor pathology, the following definition is offered, an amplification of that given by Cæsar Hawkins:

"A tumor is a new formation, an addition to the body of a substance organized or partly organized, and not the result of inflammation generally. It is the expression of a morbid activity of the organism, exhibited in an excess of the formative process."

This definition assumes or implies several distinct facts and principles at variance with some of the received opinions concerning tumor pathology; and yet, when understood, is manifestly correct, simple, and practical.

The first declaration is, that tumors are *new* formations, *additions* to the body, and this corresponds with the accompanying statement that they are *not* the result of inflammation generally. This embodies the important principle that inflammatory processes rarely result in new formations, a perfectly reasonable pathological deduction, if we keep in mind the well-known character of inflammation, its course, and terminations. For example, an

inflammatory action may produce a tumor-like swelling, a tumefaction; but in the usual order of things, when the abnormal stimulus is expended, the inflammatory symptoms subside, and with them the tumefaction, or the process goes on to one of the other terminations of inflammation. In other words, the lesion induced by inflammation is *not* a new formation in the proper sense, and does *not* proceed with a steady independent growth.

There *are* exceptional cases recognized where an inflammation does produce new formations, or, at all events, supplies the initial impetus.

The second section of this definition relates, we may say, to the *vital* phase of the subject, "the expression of a morbid activity of the organism." I am aware of the growing tendency among the ablest pathologists to ignore and even abandon the constitutional or vital factor in connection with new formations, and I would not lightly esteem their deliberate conclusions. I, however, cannot divest myself of the somewhat ancient opinion that the general organism *does* impress cell-formation, so that when its activities are perverted, it may find expression in a morbid growth of this or that variety. This conclusion it would appear is sufficiently justified by the phenomena observed in the original genesis of tissues, wherein the formative material or bioplasm is impressed to form bone here and nerve there. Nor do I see any inconsistency with the ascertained pathological phenomena in reference to the independence of these formations, for when the seed has taken root, it may grow into quite an independent plant, only drawing sustenance from the soil in which it grows. If, therefore, it be true that there is both a local as well as constitutional factor in the pathology of tumors, we do well to recognize nature's methods and admonitions when called upon to exercise therapeutic measures.

STRUCTURE.—In structure, new formations resemble normal tissues. This is questioned by many, denied by some, yet when fairly stated, does not appear improbable. The identity or similarity is in their histological structure; in their cellular elements, rather than in their gross composition. As Wagner says, p. 354, "They are not at all, or seemingly not at all, different in histo-

logical elements except in number, size, shape, arrangement, and function."

And so Green crystallized the doctrine into an epigrammatic deliverance, thus: "Every pathological product has its physiological prototype." And it is just this doctrine that furnishes the basis for an exact scientific classification; that is, if new formations bear a close resemblance to normal tissues, why not erect a nomenclature that shall be simple, constant, and meet the requirements of every case and all time? The adoption of this scientific basis of classification does not make it necessary to reject the teachings of clinical experience; not at all; the clinical features of tumors can be fully recognized and turned to account. As Paget has truly said (*Pathology*, p. 375), "To discern the true nature of tumors, we must consider their manner of life; must not only study their anatomy, but their physiology."

We propose accepting this injunction of the great English pathologist (although he still adheres to the old clinical basis of classification), giving you a classification based upon the likeness of morbid growths to normal tissues, not forgetting the clinical bearings, but rather incorporating, as hinted by Paget, all that is suggested by the phenomena manifested in the *life* of these formations. We shall, therefore, inquire not only into the structure of a growth, but have constantly in mind the question of malignancy.

It is granted this will require a more exact knowledge of normal and morbid histology; but if we have a desire to excel in our art, be better fitted to extend the very best advice and treatment to our patients, we should not neglect the more exact methods of science because of the time and inconvenience that may attend their pursuit.

For this reason, the microscopical characters of tumors must be compared with the minute structure of the normal tissues. In the matter of prognosis alone, this attentive scrutiny will sufficiently reward us, for, as remarked by Arnott, "The prognosis of a tumor can, in many instances, only be definitely settled by the microscope." The clinical method of classifying tumors has reference almost solely to the question of malignancy, and is admitted by all to be somewhat indefinite, liable to con-

stant change, and dependent for diagnosis upon the appearance of signs of malignancy.

Arnott well says (*Cancer, its Varieties*, etc., p. 3), "What, for instance, can be more unsatisfactory than a diagnosis which must await for its confirmation the return of the tumor or the infection of distant parts of the body?"

In the order, therefore, given by Green (*Pathology and Morbid Anatomy*, p. 108), the anatomical classification would include the following:

1st. *Type of the Connective Tissues.*—Embryonic connective tissue, sarcoma; fibrous tissues, fibroma; mucous tissues, myxoma; adipose tissues, lipoma; cartilage, enchondroma; bone, osteoma; lymphatic tissue, lymphoma.

2d. *Type of Epithelial Tissues.*—Papilloma, adenoma, and the carcinomata, the latter being divided into the scirrhous, encephaloid, colloid, and epithelioma.

3d. *Type of the higher tissues*, including myoma, muscular tissue, neuroma, nerve tissue, and angeioma or vascular growths.

The whole family of cysts are added as a distinct class of formations.

A word as to the use of the terms "cancer" and "carcinoma." I find Holmes, Arnott, and others favor the application of the term carcinoma to those formations which have a definite histological type, the epithelial cells, etc.; while the word cancer may apply to any malignant growth, and thus serve as a convenient term for general use among the laity.

Malignancy, as a clinical term, refers entirely to the quality of recurrence after removal; referring, secondarily, to the destructive character of the growth.

Malignancy manifests itself, 1st, in the disposition of the tumor to recur after removal at the original site of the growth; 2d, the disposition to infect neighboring lymphatics; and 3d, the disposition to the formation of similar tumors in internal and distant parts.

As relating to malignancy, we have the question of likeness or unlikeness to the tissues in which the tumor is developed. It is admitted by all that homologous tumors are as a rule innocent, and heterologous ones malignant, but some diversity ex-

ists as to the meaning of these terms. I will only say that, in view of the pathology herein hinted at, homology applies distinctly to a growth taking origin and developing in a tissue similar *to itself;* while heterology applies to those tumors which originate or are located in tissues *unlike themselves;* not, as is supposed by some, that they are composed of tissues not normally found in the body. I have but a word in conclusion as to the relation of new formations to the general organism, as the subject will be referred to more or less in the several papers which will follow.

The severest school of pathologists insist on the entire independence of tumor formation, that is, as an expression of constitutional disorder or dyscrasia; that a tumor is but the proliferation of pre-existing cellular elements excited to activity by some local irritation.

There is much in the nature and history of these neoplasms to justify this conclusion, nor do we succeed in creating much of a contrary sentiment by exhibiting the results of our treatment of them through the general organism.

However, there is sufficient evidence that tumors of every variety have been influenced and cured by remedies applied through the general organism, homœopathic principally, to justify the conclusion that tumors, to greater or less extent, are an expression of some constitutional dyscrasia. The well-known influence of heredity will also confirm us in this belief. Paget (p. 386) says, in regard to one variety, that "malignant tumors are local manifestations of some specific morbid states of the blood," and further, "that growths may originate from some morbid state, which disappearing, leaves the tumor with a separate existence;" and finally, Wagner remarks, "that excessive physical and mental exertion, depressing emotions, bad social conditions, are sometimes causes of tuberculosis and cancer."

This is sufficient to establish the proposition that tumors may be influenced by and through the general organism,—a very important practical deduction.

XXIV.

SARCOMATA.

By W. H. Winslow, M.D., Pittsburg, Pa.

Great advances have been made in pathology within the last decade, and as our knowledge of morbid growths has been increased by clinical observation and microscopical examination, the subject of the proper classification of pathological new formations has risen into deserved prominence, and excited much discussion between utilitarian surgeons and scientific microscopists.

The study of the amorphous and morphic elements of pathology and their relations to the normal tissues of the body is beset with as many difficulties as the exploration of Central Africa, where the civilized white man seeks to determine the topographical features of the country, and to establish a reliable geography, against terrestrial, climatic, and barbarous opposition. The difficulties of the undertaking may and must deter many from working in this laborious and interesting field; but the prospect of advancing our science, bringing order out of chaos, and benefiting suffering humanity, will stimulate the few to zealous efforts, until this complex subject is mastered.

The microscopic study and anatomical classification of tumors are considered, by so-called practical surgeons, an interesting amusement, of little use to them or the patient; and they claim that the knowledge gained from the family history, age, sex, cachexia, predisposing and exciting causes; the location of the tumor, its form, size, color, consistency, mobility, sensibility, pain, adhesions, rapidity of growth and gland involvement, is sufficient for all practical and useful purposes.

The microscopist and adherent of the new scientific classification, based upon the elementary forms of neoplasms, acknowledges the above characteristics to be sufficient in some cases, and useful in all; but not specific enough to enable him to form a perfectly reliable diagnosis and prognosis; nor, to authorize him to connect a morbid growth with the remedies which act upon its kind.

The contending hosts have met upon the field of malignant growths, because these rank weeds of disease rob the normal tissues of much nutriment, and prove most dangerous to human life, while they furnish to each party salient and strategic points for offence and defence.

The battle has raged fiercest over the sarcomas, and it is from their consideration that we shall learn which party is right, and what is the nature of these neoplasms.

The sarcomas have only recently been separated from other cancers by close study of the cellular structure; and the names by which they were formerly designated will show the confusion of eminent minds in reference to them. They have been called by old textbooks, and some of the new, fibro-cellular, fibro-nucleated, fibro-plastic and myeloid tumors, recurrent fibroids, medullary and encephaloid cancer, and other oracular and euphonious terms too numerous to mention.

Sarcoma is derived from the two Greek words, σαρξ, flesh, and ωμα, a morbid condition, and tumors were thus designated which had a fleshy appearance on the surface of cut sections. The name does not apply to the true muscular fibre myomas, but now includes tumors composed almost entirely of cells belonging to the connective tissue type, which have been arrested in development at a stage anterior to that necessary to form a perfect physiological tissue. That is, the cells, at first of the embryonic type, round particles of nucleated protoplasm, represented by the leucocytes, the repair cells of granulations, and those of the mulberry body of the ovum, originate in part by exudation from the bloodvessels, or from proliferation of the connective tissue corpuscles normally present. Virchow says, "The mode of development of pus characterizes the early stage of every heteroplastic formation," such as sarcoma and carcinoma.

Local irritation and marked derangement of function probably occur in the normal cells of a part, to permit and foster such vagabond tumors in their midst; for they are more destructive to their host than the tapeworm or the mistletoe.

The embryonic cells develop in different degrees, and thus arise varieties of sarcomas, which it is necessary to describe, as they differ in microscopical appearance, resemble other tumors of different significance, and vary in their degrees of malignancy.

The round-celled sarcoma is made up of the embryonic, indifferent granulation-cells, only slightly developed into round and oval, granular, or amorphous, nucleated and nucleolated bodies, a little larger than white corpuscles; a few oat-shaped and spindle cells may be mingled with the others, or arranged in parallel rows, so as to resemble connective tissue bands; but the small round cells make the bulk of the tumor, and distinguish it.

The cells are clear in outline, easily recognized, and have the slightest trace of an amorphous intercellular substance. Blood-vessels are numerous, and large capillaries penetrate between the loose cells, and being unsupported by firm tissue, they are liable to rupture, and to cause considerable hæmorrhage and discoloration of the tumor. Considerable creamy juice exudes from a cut surface. There are no lymphatics nor nerves in the growth, though it is exceedingly liable to affect the lymphatic glands.

When the tumor consists of small round cells exclusively, and is found in connection with nervous tissue, it takes the name of glio-sarcoma or glioma.

When the tumor has a greater mixture of spindle cells, and they form slender bands, crossing each other in different directions, there is an appearance of alveoli, in which the round cells seem grouped, and the specimen is denominated an alveolar sarcoma. This is very malignant, and fortunately very rare.

The spindle-celled sarcoma, the most frequently met with in practice, has the same embryonic cells, more uniformly developed into plump, oat, and spindle shapes, with tapering and filiform ends, occasionally branching like the processes from ordinary connective tissue cells.

The body of the cell is amorphous and faintly granular matter, and contains an elongated oval nucleus and nucleolus. The

cells resemble the involuntary muscle cell, and may be mistaken for them. It is also like an imperfect connective tissue cell, such as are seen in tendinous tissue from an embryo.

The cells are arranged parallel to each other, held together by a homogeneous or granular substance, and bundles of them run in different directions, and give a fasciculate or bandlike appearance to parts of the tumor. Here and there a few round and oval cells may be seen, which have failed in their course of development. Vessels run freely between the cells, and their middle and external coats are often changed into sarcomatous tissue. Lymphatics and nerves are absent, and this variety rarely affects the lymphatic glands.

Because of the close packing of the cells and their higher development, these neoplasms have a solid fleshy and even cartilaginous character, and sometimes cut with the creak of a fibroma. A surface section presents a great variety of colors, and occasional spots of ruby show where capillaries have ruptured. There is only a little dirty ricewater-like juice exuding from a cut surface, and containing adherent spindle cells in flakes.

As these cells infiltrate the normal tissues, it is often difficult to determine the limit of the morbid growth, and some pathologists have averred that spindle-cell tumors were the product of the retrograde metamorphosis of fibrous tissue. The neoplasms are often encapsuled, when infiltration is hindered and, of course, the danger lessened.

The myeloid or giant-celled sarcoma is a product of embryonic cells run riot; a development akin to that of noxious weeds, and the structure has a coarse and repulsive look.

There is considerable difference in the cellular elements; we find spindle-cells arranged in bands and fascicles, forming false alveoli, within which lie large masses of protoplasm of irregular shapes, having many bright nuclei. It seems as if there was a prodigious manufacture of formed material by the nuclei, which are separated by the homogeneous masses.

These large plate-like structures are called giant-cells, and are analogous to similar ones normal to the marrow in the long bones of a fœtus. They are occasionally seen in other varieties of sarcoma, but in this constitute the great bulk of the tumor, and

thus give it a distinctive character and name. Round and oval cells are, however, mingled sparingly with the other constituents of this variety; there is the same vascular supply by altered vessels, and absence of nerves and lymphatics.

The growth is denser than other sarcomas, has a fleshy, fibrous and often cartilaginous look, and very little juice. It is not any more malignant than the spindle-celled, and less than the round-celled; is liable to recur, however, and also to have secondary growths in internal organs, particularly the lungs.

It is the greater number present of one of the three kinds of cells which I have described, that indicates the name of the neoplasm. Now you may find the three sorts of cells about equally mingled in a tumor, and must examine several portions of it before you can decide which cells preponderate, and to which variety the excrescence belongs. Then there may be additions to the typical growth of fibrous tissue, when it becomes a fibro-sarcoma; of cartilage, and you have an enchondro-sarcoma; of calcium salts, or of true bone, and it is an osteoid sarcoma; cysts form a cysto-sarcoma; mucus, a myxo-sarcoma; pigment, a melano-sarcoma. The latter are generally spindle-cells, and the pigment may color them reddish-brown, or even black. It is contained within the cells; not in intercellular spaces, as the débris of a hemorrhage, to which these growths are liable, would be.

Sarcomas occur in the skin, intermuscular septa and fascia; in the adventitia of vessels, the sheaths of nerves, the hollow bones and the orbit; upon the periosteum, in the mammæ, testicles and lymphatic glands, and in the mediastinal spaces.

They are most frequently seen in the skin and subcutaneous tissue, and have a predilection for the female mammæ, where they arise as the result of local injury.

They rarely affect the lymphatic glands, as carcinoma does, because they have no lymphatics, and their larger cells could not traverse the narrow canals; but it is proved that sarcoma cells are washed along in the current of the veins, and thus produce widespread secondary growths. They have been found in a few cases primarily, in the greater number of cases secondarily,

in the lungs, liver, pancreas, uterus, kidneys, mucous and serous membranes, the heart, brain, spinal cord and its membranes.

They arise singly, are sometimes sharply circumscribed, or encapsuled; often diffused and combined with normal tissues. Are round, irregular, lobed, tuberculated or spread out in flattened masses.

They vary in consistency from that of a creamy pulp to that of fibrous tissue, cartilage, or bone; but generally feel like soft carcinoma.

Their color internally varies from white gray, yellow, pink, reddish-brown to black; and the amount of juice varies with the degree of consolidation.

They sometimes remain dormant for years, grow slowly or very rapidly.

They do not dimple or retract the skin, have little pain, or only a dull throbbing one, and are very likely to recur in the cicatrix after removal. In such cases the cells are generally larger and plumper in the secondary tumor, and it is rather more succulent. In soft movable localities the growth is generally more rapid and more malignant. Secondary internal metastasis occurs, in general, only at a late stage of the primary affection.

Sarcomas are subject to atrophic, inflammatory, fatty, cheesy, hæmorrhagic, mucoid, cystic, and gangrenous degenerations. They rarely ulcerate and break open, as do some other neoplasms, but form fungoid masses, prone to hæmorrhage, and much purulent discharge, which gradually undermines the health, and kills by exhaustion, if secondary internal tumors do not sooner destroy the patient.

They arise at all periods of life, but are more common in the early and middle time; the softer growths are most common in children, the harder in adults. Thus glioma is seen in the child's eye, and spindle-celled in the adult's.

The three varieties show some choice of location sometimes; the round-celled for nervous and mucous tissue, the spindle-celled for fibrous, and the giant-celled for osseous. The first is apt to affect the glands, the second to recurrence, the third variety to metastasis to internal organs.

Diagnosis.—It must be evident to those who have followed this paper understandingly, that a group of malignant tumors, with such varied clinical and anatomical characteristics, must cause trouble for the diagnostician. The fact is, that there is not a clinical character or quality united to one of the sarcomata which may not be predicated of most of the benign or homologous tumors and of the carcinomata. It becomes, then, of vital importance to tear away the mask and reveal them in all their hideous and malign drapery, and this can only be done by examining a section of the suspected growth by the microscope. Paget says: "The destructive value of these characteristics of malignant diseases may be depreciated; indeed, I have myself lowered it by showing that each of them may be absent in tumors having all the other features of malignancy, and that certain of them may be observed occasionally in tumors that in other respects appear non-malignant."

The surgeon, as well as the microscopist, therefore must remain in great doubt as to the nature of a neoplasm before removal; though the former by his chemical points, and the latter by examining scrapings and discharged debris, may give approximate opinions.

After the growth is removed, the microscopist as far surpasses the surgeon in diagnostic abilities, upon which prognosis and treatment depend, as his instrument does the naked eye.

The round-celled or medullary sarcoma resembles the lymph-adenoma, adenoma, myxoma, medullary carcinoma, and young scirrhus, and cannot be certainly distinguished from them except by the microscope. The spindle-celled sarcoma is so like myoma, fibroma, adenoma, and scirrhus, that it can seldom be recognized by its naked-eye appearances.

The giant-celled, or myeloid sarcoma, also bears a striking resemblance to fibroma and mature scirrhous carcinoma. Besides the above resemblances, sarcomatas simulate many homologous hypertrophies.

The microscope shows us the geography of a growth, as the telescope reveals the wonders of the star-depths; and, when clinical characteristics and naked-eye appearances are so treacherous, as

confessed by the best authors, the surgeon who does not use the microscope and relies upon the new classification, is unwise.

Nothing short of a critical examination of the sections of a tumor through an eye-piece and objective, will unravel its elements and establish its position in pathological classification, so that the surgical and medical treatment and the prognosis shall rest upon a rational and scientific foundation.

The new classification gives us definite names for definite morbid growths, and, when a large series of observations connect clinical symptoms and definite structures with their medication, we shall be able to build up a systematic course of treatment for each, and thus benefit the patient as well as his medical attendant. One case of suffering relieved, or life prolonged, will compensate for the trouble of learning accurate diagnosis.

Treatment.—From a superficial examination of the symptomatology of medicines, it may seem easy to select the proper remedy for a tumor which arises within the range of our senses, but nothing is so difficult. In many cases careful examination fails to detect any deviation from physiological action, except at the seat of the growth, and there the symptoms are often so meagre as to leave one floundering among the driftwood of pharmacy.

Dr. Franklin says of the treatment of morbid growths: "It is here homœopathic remedies fail to accomplish the great amount of good that obtains under other circumstances. Indications are so indistinct, and cures effected so rarely, that this whole subject is too little understood to permit anything like accuracy of result or certainty of detail."

Dr. Gilchrist, with more faith in his selective ability, has given us some valuable hints concerning the treatment of tumors, but his heterogeneous therapeutics, and paucity of cured cases, awaken distrust in the mind of the conscientious physician.

Dr. Helmuth seems more inclined to extirpation of questionable morbid growths than to await the slower and less certain action of medicinal molecules.

The old-school men, with less therapeutic knowledge than homœopaths, of course waste little time in prescribing, but go

to the root of the matter by means of caustic pastes and glittering steel.

When there is an abnormal increase of tissue in any part of the body, or a tumor ultimately arises, as long as the growth is dormant, or increases very slowly, has little or no pain, does not produce inconvenience by position or pressure, and presents no suspicious symptoms, it is good practice to endeavor, by the wealth of our therapeutics, to try to remove the disease by medicines. Among the remedies by authority and experience proved to be of great value, the preparations of Arsenic, Mercury and Iodine stand pre-eminent; Calc. phos., Calc. carb., and Calc. iod. should be considered; and Phosphorus, Silicea, Baryta carb., the Kalis, Salicylic acid, Sulphur, Graphites, Colocynth, Staphisagria, Ledum, Conium, Teucrium, and Lycopodium, merit our most careful administration, as remarkable instances of the disappearance of what were considered malignant tumors have followed the use of many of these. Dr. W. R. Childs, of Pittsburg, recommends Calc. phos., Calc. carb., and the Iodide of arsenic very highly.

Recent investigations in German hospitals seem to establish the conclusion that many sarcomas and carcinomas are the remote consequences of syphilis. Whether this is true or not, prolonged treatment with the Mercuries and Kali iodide have produced most astonishing results, and in many cases brought about a permanent and thorough cure.

When a tumor presents any of those suspicious symptoms which lead one to suppose it to be malignant, it should be extirpated by a free dissection of the contiguous tissues, and the wound cauterized with Carbolic acid or the Galvano-cautery, taking care that so wide an area around it be removed that no scattered infiltrated cells may remain to promote a recurrence. It should then be examined by the microscope that its nature may be definitely determined, and a rational medicinal treatment should be pursued for many months.

Under such a method of procedure we may hope to radically remove sarcomas and their predisposing causes.

At the clinic of the Hahnemann Medical College of Philadelphia, in 1876–77, Professor J. H. McClelland removed an

enormous sarcoma of the female mamma, which, by microscopic examination, I found to be of the giant-celled variety.

A very considerable amount of surrounding tissue was removed; the wound was thoroughly washed with a twenty per cent. solution of carbolic acid, and closed by adhesive plaster and the usual bandage. Salicylic acid, 3^x trituration, was given internally, and continued for many months. The woman recovered rapidly from the surgical procedure, and has remained perfectly well, with no signs of a recurrence of the tumor to the present time, over eighteen months since the operation.

The radical and successful treatment of this malignant growth, which was rapidly destroying the patient's life, shows the great value of surgical interference, even at a very late stage.

XXV.

FIBROMATA AND MYOMATA.

By George A. Hall, M.D., Chicago.

In the discussion of tumors, the subject for consideration at this meeting, chosen by the Bureau of Surgery, I have been assigned the task of looking up the history, nature, and the medical and surgical treatment of fibromata and myomata.

In entering upon the discharge of this duty, I find it very difficult to reconcile all the conflicting theories in regard to the causation, pathology, growth and termination of these two classes of tumors; but I have tried to separate the chaff and give simply the wheat, and that too taken from the sources I believe to be the most authentic, and from the most recent authorities.

GENERAL CLASSIFICATION OF TUMORS.

The class of diseases which includes tumors, may be reckoned as a part of the great division known as hypertrophies or growths of a new formation. They appear to be expressions of a morbid excess of the formative process, and in each case the mode is peculiar in which this excess is manifest.

The increase in size of all, or nearly all tumors is of "themselves;" they grow as parts of the body grow, and by their own inherent properties, and depend upon the surrounding parts for little more than the supply of blood from which they may appropriate materials.

THE HISTORY OF THE FIBROMATA AND MYOMATA.

The history of a given kind of tumor dates from the time

when the surgeons ceased to classify all tumors as either malignant or benignant. Up to this time observations of tumors were made in the gross, and there was but little skill in making accurate diagnosis or prognosis.

When there were more accurate observations made at the bedside, and the more varied became the tissues of different tumors as revealed by examinations made with the microscope, then the ruder classification gave way to the more scientific; and when the attempt was made to divide all diseases according to their peculiar nature and cause, and it had failed, then came the time when practical medicine and surgical art sought for its foundation the anatomical system, and upon this basis were added the physiological functions and clinical history, as accessories in determining the kinds of growth. Then the general classification gave way to a special, and among the various forms we find those we are about to discuss.

They have received their name from the character of the structure in which they are found; and the continued study of the finer anatomy and the developmental structure of the new formations is still the historical basis for ascribing both name and character to this class of diseases.

PREDISPOSING AND EXCITING CAUSES.

In regard to the predisposing and exciting causes, we shall find them to be such as tend to the proliferation of cells and to the formation of new tissue, or in other words where there is a numerical hypertrophy, in contradistinction to simple hypertrophy from the increase in size of the elements. As a rule the same causes that operate in producing hypertrophies by the inflammatory process do not cause the growth of tumors.

The tumors under consideration are non-inflammatory in their nature, and the predisposing and exciting causes are consequently inherent within the organ or tissues involved. If the parts involved are stimulated to increased nutritive activity, there follows in consequence an increased development, as is the case when one kidney becomes hypertrophied by some incapacity in its fellow.

The causes for the most part must remain obscure, yet they are at times partially ascertainable, and may be divided into constitutional, predisposing, and directly exciting. The existence of a constitutional cause may or may not be discoverable.

Were these tumors malignant, they would be more easily referable to a cachexia, dyscrasia, general constitutional taint, scrofulosis, etc.; but these non-malignant growths are classed by the best authorities as resulting from some purely local cause, with scarcely any reference whatever to constitutional habit.

There is to be noted here, however, a peculiar tendency on the part of colored and mulatto women to grow tumors of a fibrous nature. Call this constitutional, or coincidence, or what you will, the myomata and "fibroids" of the uterus are found in a considerably greater proportion in this class than among the white population. This tendency seems to be not necessarily hereditary, but rather constitutional with them.

The direct exciting causes are where the tissues are directly irritated and thus stimulated to unnatural action, and in the transmission of elements of the primary growth, cause proliferation, and thus become the centres of secondary formations.

THE KIND AND MANNER OF GROWTH.

In the first place we notice as one of the most satisfactory evidences of these morbid changes, that an accurate histological examination has been more useful in determining their correct diagnosis than either their physiological or clinical history.

Hidden as these new formations are from view, yet so definite is the knowledge to be gained by that close study of the parts involved, that with due observation and careful discrimination it is possible to describe accurately the character of the growth, and to prognosticate correctly as to its manner of termination.

Science has contributed but little that is definite in regard to the etiology of this subject, nor has it as yet satisfactorily explained many points referring to the laws that govern their increase, propagation, retrogression and recurrence.

Histology has established the unqualified generalization that these tumors are always the offspring of pre-existing tissue ele-

ments, stimulated to increased nutritive activity. This increased activity of a tissue leads not only to the enlargement of its component elements, but also to the production of new ones.

As each and every tissue is capable of stimulus, each and every tissue then can take on its own peculiar enlargement and growth, and consequently every tumor, is the counterpart of some existing tissue. As to the mode of development of the fibromata and myomata, it is demonstrable that they differ in no way from the development and growth of the healthy tissues to which they are allied; but the part that is played within the cellular elements comprising these tissues can not in our present state of knowledge be certainly stated. The probabilities are that the increased activity is within the mobile cells, which are the most active and the most capable of multiplying by division. Whatever be the part played by the respective elements in the process of development of the new growth, the first result is to produce a new tissue composed of innumerable small roundish cells. This is the embryonic tissue which subsequently develops into the tissue of which the new formation is composed. As this growth then differs in no way from the parent tissue, we have in this instance an homologous growth, which in case of the fibromata is composed entirely of connective-tissue elements and of the myomata of muscular fibres. Great importance is attached to the two classes of tumors, the homologous and the heterologous. The proper distinction to be observed here, we believe, is that where the growth resembles in its structure and development the tissue from which it originates, it is homologous. A purely homologous growth then is a hyperplasia, an excessive or overgrowth of a tissue, and such we determine the myomata and the fibromata to be.

The growth of the parts in relation to the surrounding tissues, and also the retrogressive changes that take place, demand a word by way of definition.

If the tumor increases simply by proliferation of cell tissue, the adjacent parts are simply displaced by its increase in size and are not changed in their growth or nutriment. When the tumor has ceased to enlarge, it becomes sooner or later the seat of retrogressive changes. As a rule it may be stated that the permanence and durability of a tumor bears an inverse ratio or re-

lation to the rapidity of its growth and to the inferiority of its organization.

The more rapid the growth and the more lowly organized the tissue formed, the less its durability and the sooner do retrogressive changes occur. These changes are similar to those met with in physiological tissues. The offspring of the excited tissues seem to lose in grade of vitality what they gain in numerical cells, and thus the more numerous the progeny of any tissue element the less healthy and robust it must be. When these cell proliferations lose their vitality and are incapable of living on the blood supply furnished them, they undergo fatty degeneration and their termination is in mucoid softening or calcification.

THE FIBROMA OR FIBROMATA.

The fibromata, fibrous connective tissue tumors, or fibroma, the name proposed by Sir James Paget, are tumors consisting of fibrous tissue. They originate either in the cutis or subcutaneous connective tissue, from the submucous or subserous tissue, from fasciæ, the periosteum, the neurilemma, and from the connective tissue of organs.

In structure the fibroma present some variations: some of them are composed of firm, dense, fibrous tissue, such as constitutes tendons; others are larger and less fibrous in consistence, more resembling the connective tissue of the cutis.

The fibres which constitute the greater part of the growth are closely interlaced, and are distributed without definite arrangement or are grouped in bundles of various sizes.

The connective-tissue corpuscles are very few in number. The size and number of these corpuscles vary according to the rapidity of growth—the slower the growth the more fibrous the tissue and the smaller and less numerous the cells.

The fibroma usually contain but few bloodvessels, but in some cases they are numerous and unite to form a cavernous network, the walls of which are united to the tissue of the tumor, so that when they are ruptured from injury or divided by the surgeon's knife, they are unable to retract, and produce hæmorrhagic results.

The growth of these tumors is slow and from the centre, always taking place within the capsule with which it is surrounded, and which separates the tumor from the surrounding structures.

Their shape is either spherical or oval; they are sometimes lobulated on the surface; but from this type the tumor may deviate to adapt itself in its form to the different resistances of surrounding parts. When this tumor grows within a cavity it is apt to assume the shape of that cavity, whatever it may be.

If the tumor is pendulous, the more dependent portion usually grows most or is most swollen; it tends from the spherical to the pyriform shape, yet it retains its characteristic smooth surface.

Microscopic examination makes these masses to consist of fibres or filaments, exceedingly slender, uniform, undulating or crooked, more or less perfectly developed and variously arranged.

Examined by sections, the fibroma or fibromata, as we use the terms interchangeably, present a grayish basis substance, nearly homogeneous, intersected with pure white bands and lines. This basis substance may be shaded brown, yellow or blue, and the white lines variously arranged.

The secondary changes of this class of tumors are partial mucoid softening and calcification; ulceration may also occur when these growths are in the submucous tissue. As a rule the fibroma begin to develop in middle life; rarely are they found in youth, and still more rarely do they begin their growth in the aged.

Clinically the fibroma are perfectly innocent, and have little or no tendency to recur locally after removal.

We deem it unnecessary to enumerate all the variously modified growths in which we find a certain proportion of connective tissue. Such tumors have a history, growth, and development peculiarly their own, and the description of the fibroma just given is sufficient for the purpose of practical diagnosis and prognosis. Concerning the treatment of these growths we will consider it in connection with that of the myomata.

THE MYOMA OR MYOMATA.

These are tumors which probably always originate from muscular tissue, and usually they resemble the non-striated variety.

The tissue consists of elongated spindle cells with rod-shaped nuclei, either grouped or isolated, with a varying quantity of the connective tissue. The connective tissue is in one class of these tumors often abundant, namely, in the "fibroids" of the uterus.

The muscular element of these tumors present a more or less regular arrangement, or pass in all directions through the tumor. The bloodvessels, which are usually not numerous, are distributed in the connective tissue. As a rule they are homologous growths, and are distinctly circumscribed and surrounded by a fibrous capsule, or else they constitute ill-defined masses in the midst of the muscular tissue in which they grow.

The myoma, besides being frequently met with in the uterus, also occur in the œsophagus, stomach and intestines.

The changes to be noted in this class of tumors are calcification, mucoid softening, and the formation of cysts.

Hæmorrhage from these tumors is not uncommon. According to the authority of Virchow, Green, and Billroth, we class uterine "fibroids" under the head of myoma rather than fibroma. The reasons are these: first, the rod-like wavy form of the nuclei, and the distinct arrangement of the fibrous layers into bundles, while the individual fibre-cells are isolated with difficulty, and can be recognized only by their chemical tests; secondly, the probabilities are in its favor, since the neoplasia occurs in the substance of the uterus. Again, it is proven that the newly developed so-called fibroid consists almost entirely of true muscular tissue. They may be firm hard masses imbedded in the uterine walls, or project into the uterine or abdominal cavities. Their growth is slow, they are often multiple, and in the older growths there develops a certain proportion of connective tissue, and hence the term "fibroid."

Clinically the myomata are perfectly innocent.

With reference to the constitutional cause of their appearance, *i.e.*, uterine fibroids, which occur in a majority of cases in colored women, I offer the suggestion that it is possibly due to the well-known increased sexual development that these women have, and that these tumors may be the remote result of the indulgence of their passion. We know that in cases of fibrous degeneration of

the uterus, the sexual instinct is so great as to be beyond control at times, and that a complete fibrous degeneration does, in consequence, result. We also have the clinical history that these tumors are erectile and sometimes when they are large and subperitoneal they induce engorgement of the muscular organ, which in turn gives nourishment to a new and excessive growth.

TREATMENT—MEDICAL AND SURGICAL.

Medical.—Upon this subject much has been written and many experiments have been tried, none of which have been demonstrated to be of universal good. The great difficulty in the way of treatment of this class of tumors is a want of knowledge of their early growth, or the predisposing causes that may exist in the system.

It is not usually the case that even the patient is aware of the presence of these morbid growths until they are far advanced, and it may be weeks or months and even years after they are conscious of the fact before professional advice is sought.

I believe if they could be detected in their incipiency, when the growth begins to grow "of itself," independent of the tissues with which it is connected, removing the exciting and predisposing causes by giving a well-chosen remedy would cause a cure in many cases. We recognize the fact that this class of tumors are not directly destructive to life. They may by their proximity to other organs or from the nature of the organ involved produce serious functional disturbance, or from their size wear out the vital energies of the patient. Hence our treatment should be both abortive and palliative.

The remedies that I have found most serviceable are *Kali bromide, Kali iodide, Secale, Ustilago, Trillium, Calc. iodide, Phytolacca, Arsen. iodide, Iodide of baryta, Moschus, Rumex, Terebinthina.*

The Bromide of Potassium I have used in several cases in the early stages with pleasing results. I believe its liberal and timely use will bring many of these tumors, especially the fibroids, to a standstill, especially in cases attended with marked reflex symptoms, and also those that affect the nerve centres themselves, pro-

ducing hyperæmia; and in cases complicated with neuralgia, and hysterical manifestations.

Kali iodide is an excellent remedy where you have specific taints complicating the case. Where the tumor is accessible I have found an aqueous solution of this drug locally applied of valuable service in arresting its progress.

Secale or *Ergotin*, is of well-known value in this division of tumors, and does not need extensive comment. I am happy to testify with many others in regard to its value in the treatment of the intramural or submucous intrauterine fibroids. I believe its best results are in connection with this class of tumors. I have given it in all forms, from the crude drug to the high potency, but I believe that the mode of action of this remedy is in controlling the circulation within the muscular walls, and thus aiding mechanically in cutting off the blood supply of the morbid growth. Hence it should be used in the crude form, or by injections, as practiced most successfully by Hildebrant of Königsberg.

The amount injected is usually three grains, which may be repeated daily for weeks, and it seems to have peculiar efficacy if used just before menstruation. I have also used this remedy with the aspirator in cases of subperitoneal fibroma, with varied results in the cases in which I have tried it. I cannot say that any great good resulted from its use, but on the other hand it caused inflammation and other violent and unpleasant symptoms in some instances.

Ustilago given in cases of subinvolution and areolar hyperplasia with incipient fibromata, will sometimes arrest the growth and restore the size of the organ. Its best results seem to be addressed to the primary stages of development. Its administration should be continued steadily for some length of time.

Trillium I believe to be one of our best remedies in the treatment of uterine fibroids, if attended with hæmorrhage. Its continued use internally or its administration hypodermically will often astonish the most skeptical as to its remedial effect. It controls the excessive flow more satisfactorily than Secale or Ustilago, and in several cases now under observation it has certainly arrested the growth of the tumors, and some have as certainly diminished in size.

Calcarea iodide will be found serviceable in scorbutic and scrofulous subjects.

Phytolacca, when the glands become indurated, and where the fibromata occur outside of the reproductive system, I use externally and internally.

Arsenicum iodide, where we find in the early stages of development that there has existed some cutaneous trouble, which disappeared at or about the time the new disorder was noticed; local and burning pains, with gastric disturbance, are prominent features.

Iodide of baryta, in cases accompanied by glandular enlargement and lymphatic swellings, with a tendency to suppurate.

Moschus seems especially adapted to colored persons and creoles, and in all cases where the animal instincts are fully developed and the passions uncontrollable.

The above are some of the more prominent remedies I have found serviceable in the treatment of fibromata and myomata. Many more might be enumerated which have been used in the treatment of tumors with good effect, but none have as yet been pronounced of universal good.

SURGICAL TREATMENT.

On this point we may say there is little that is new in the surgical literature of the day, unless we compare the varied resources of to-day with those of a quarter of a century ago. It is not impossible that the field of discovery will still further be explored, and that operations now dreaded may yet be performed with safety. The general truths of surgical resource are to be regarded in operations upon these tumors. They are as follows:

1st. Operations are justifiable when the growth has resisted other measures and is so located as to render removal safe and practical.

2d. When the diseased condition is threatening the patient's life.

Growths from the cutis or subcutaneous connective tissue, from fascia, the periosteum, and in many cases from the neurilemma, are usually easily recognized, and as a rule may be care-

fully dissected out with no untoward symptoms or unfavorable results.

The surgeon's skill is taxed most in caring for and undertaking operations for the removal of the submucous, subserous, subperitoneal and interstitial varieties of tumors connected with the reproductive organs.

The methods used are as follows:

Injections to promote absorption, excision, écrasement, galvano-cautery, avulsion, enucleation, gastrotomy.

It is unnecessary for me to enumerate the special indications that point to the selection of any one of the above-named methods. The more critical the diagnosis and the more careful the study of the adjacent organs and tissues, the more apparent the advantages of some one of the operations mentioned.

The dangers in operating are the same as in other operations, viz., primary or secondary collapse from shock, hæmorrhage, peritonitis, septicæmia.

Guarded as we may be against any or all of these dangers, yet the facts at my hand, and they embrace a collection from extensive research and careful compilation, would indicate that in many of these operations the French excel in obtaining satisfactory results; yet their careful estimate is, that where the operations have embraced a partial or complete ablation of the organ connected with the new growth, especially the uterus, out of one hundred operations only thirty-two will survive.

The statistics from our own operations do not show even this percentage of recovery, and it is to be supposed that the present rate would be decreased if in all cases of operation whatever the results were reported.

I close this paper by referring to two cases coming under my observation.

CASE 1st.—Mrs. M——, aged 38, was suffering from uterine fibroid. October 13th, 1873, I operated for its removal. The longitudinal incision through the median line extended from the ensiform cartilage, going to the left of the umbilicus, to within two and one half inches of the symphysis pubis. The abdominal parietes were very tense, owing to their enormous distension.

When the peritoneal cavity was opened a large subperitoneal fibroid pushed through the opening.

It was oval in shape and contained on the posterior surface two nodules the size of a hen's egg each. With this exception the surface was perfectly smooth, and resembled in color a healthy ovarian cyst. Upon palpation distinct fluctuation was felt, which is one of the peculiarities of this form of tumor when grown to such a magnitude. The tumor was perfectly solid, and weighed fifteen and one-half pounds. On passing through the opening it rolled forward, dragging into full view the uterus and its appendages. The growth was from the fundus of the uterus, and was not unlike, in resemblance, a large cabbage; the uterus the stalk, the tumor the head. Owing to the vascularity of the uterus and its appendages it was considered not safe to extirpate the uterus. A double ligature, tied both ways, was passed through the fundus and tumor, and the tumor amputated. The uterus was placed back into the abdominal cavity, and was covered with the peritoneal folds, with a view of causing union and covering over the raw surfaces; but a convolution of intestine fell into contact with the cut surface and rapid adhesive inflammation followed, causing a portion of the intestine to become adherent by means of the exudation. The lymph becoming organized constricted the intestine, and we had in this case continued vomiting from this strangulation. The patient died on the sixth day from this condition of affairs. If the stump had been fastened to the abdominal parietes we might have avoided this sad termination of life. Where subperitoneal fibroids are pedunculated I recommend amputation at the point of union with the uterus, or the ligation of the lateral appendages and amputation at the cervix.

This operation has been successfully performed, and when it is skilfully done I do not consider it attended with greater danger than the removal of ovarian cysts with adhesions.

CASE 2d.—The danger and risk of removing a subperitoneal fibroid is much greater than that of a submucous intrauterine, the danger being in the latter in proportion to the amount of muscular structure involved. When we have a submucous intrauterine starting from an intramural, we may find great dif-

ficulty in its enucleation, owing to the firm manner in which it is imbedded in the muscular structure. Add to this the complication of a growth extending through the external surface, forming a subperitoneal, and we have an increased risk as well as a barrier interposed to its perfect removal.

These were the circumstances attending an operation in which I assisted my late lamented friend and colleague, Dr. G. D. Beebe, in the summer of 1874.

Prof. Beebe had introduced the galvanic needle through the posterior wall of the uterus into the fibrous mass, hoping to promote absorption. The first operation was attended with but little result. The second time the current was so strong as to produce a destruction of the tissue; inflammation and suppuration followed, then absorption. I was called to see the patient when suffering from septicæmia. An operation was decided upon, and a tumor weighing six and one-half pounds was removed.

The difficulties encountered were, 1st. Intramural fibrous bands running through the uterus and appearing on the posterior surface in the manner of subperitoneal tumors. This tumor could not be fractured by the hand, but was severed by a pair of long curved scissors passed upon the palmar surface of the hand while in the cavity of the uterus, and cut as near the uterine wall as the presence of the fingers would admit. After its complete separation we found great difficulty in removing it from within the pelvis, owing to a narrowing of the transverse diameter to less than three inches. A blunt hook was introduced within the uterus, and there an incision was made by means of a long-handled bistoury, cutting the tumor into halves. Delivery was effected in this way.

XXVI.

PAPILLOMATA, ADENOMATA, MYXOMATA.

By L. H. Willard, M.D., Allegheny, Pa.

Three varieties of morbid growth have been assigned to me as my share of the papers of this bureau, viz.: Papillomata, Adenomata, and Myxomata.

In accordance with the wishes of our chairman and with my own desire, I have endeavored to arrange and describe them anatomically, believing that while we have no good, reliable, or fixed classification, that proposed by Abernethy is, perhaps, the best. As such I have been induced to adopt it, thinking we are benefited in many ways; for should any writer be describing a tumor, if he gives the anatomical characters so far as known, we readily understand the description; while, on the other hand, if a tumor is merely said to be fibrous, or a polypus, we are in doubt in regard to the nature of such tumor or polypus; and when we consider the numerous varieties of what may seem to be fibrous growths, and the still more numerous varieties of polypi, whether they be papillary, adenomatous, myxomatous, fibrous, etc., we are led to consider the old classification unscientific and perplexing. This, in itself, is but trifling when compared to the disadvantages which arise from the incomplete manner of treatment.

It is very evident, or it may appear so, that a polypus of a myxomatous growth may require for its cure a different remedy from a polypus of papillary growth, and so on.

Among the tumors of different tissues, we may have different

symptoms, which, if carefully investigated, may, by their significance, elevate the prescribing of remedies to a higher plane, and give more certain results than we have yet attained.

The remarkable success which many have recorded concerning the cure of tumors, and the skeptical views of others in regard to these cures, may in a manner be thus determined. Not being a skilled pathologist myself, nor laying claim to any research in this direction, I can only view the recent investigations which have followed year by year, as so many advances toward the fulfilment of the most ardent hopes and aspirations that will lead the inquiring mind to a full appreciation of these pathological discoveries, and, by so doing, guide us to a more explicit and certain method of describing and curing these different growths.

The paper which I present to-day has in view the arrangement of the varieties mentioned according to their anatomical basis, the first being the

PAPILLOMATA.

Among tumors of this class are included all those which under the microscope reveal a structure similar to ordinary papillæ; and hence we find them generally growing from the cutaneous, mucous, or serous surfaces, forming tumors by hypertrophy of the normal covering, or, where there is but small amount of epithelium, by growth of the connective tissue and vessels. This epithelial covering varies in character in different growths. If the tumor is on the skin, the epithelial layer is very abundant, with few vessels, and hence the tumor will be hard. To this form has been given the name of warts, horny growth, etc. (Such growths as condylomata and venereal warts, being but symptoms of a disease, are not included in this paper.)

The papillomata, when springing from the mucous membranes, are generally soft, succulent, have large vessels, and are called, from their appearance, soft papillomata, varying in their degree of consistence according to the amount of connective tissue. This variety is found in the alimentary canal and genito-urinary organs. They are liable to dangerous hæmorrhages. When examined under the microscope, we find processes of connective tissue, like the papillæ of the skin, with few or many vessels,

some round and stellate cells, granules, and vessels covered over, more or less, with epithelium. Papillomata of serous membranes never form distinct tumors. They are met with as small growths on the synovial membrane in chronic disease of the joints.

This classification, then, embraces, according to their anatomical character already mentioned, those tumors called, in the old classification, cauliflower growths, fibrous polypi.

Clinical Characters.—All are innocent growths. They may be mistaken for epithelioma if in the bladder or intestine, the symptoms of both being similar. They are characterized, if found in such situations, by dangerous and sometimes fatal hæmorrhages. In the papillomata the epithelium is homologous, being situated only upon the surface of the papillæ, and in no case growing *within* their connective tissue basis.

In the epithelioma, on the other hand, it is heterologous, and is met with at the base of the tumor, in the subjacent connective tissue.

Prognosis is always favorable, unless the growth is situated in the bladder or intestines, when, by reason of vascularity, it produces, in some instances, death from hæmorrhage. The warts are considered innocuous; the horny growths are, in some instances, at their base, the seat of epithelioma, making the prognosis very grave. The polypi, pedunculated growths, cauliflower excrescences, moles, etc., are always innocent, unless, as will be hereafter shown, they may become the seat of a malignant growth. When this occurs, it is generally thought that the ulcerative process has been the means of attracting to the spot the malignant cells, which thereby have a field for development.

Treatment.—As warts are entirely devoid of danger, and as there is such a multitude of cures, I think we may safely conclude that they will very often get well without any treatment; but should they, at any time, lose their hard appearance and become soft, our suspicions should be aroused, and we should resort to the microscope as the means to confirm or quiet our suspicions. It is generally best, and, I think, confirmed by most surgeons, that whenever the warts, horny growths, moles on the face, cauliflower excrescences, or any of the varieties of papil-

lomata, show any tendency to ulceration or increased vascularity, they should be immediately removed by the knife, or, what I think is preferable, by the galvano-cautery. The latter seems to destroy the cells by its extreme heat, and the eschar thus made heals readily. In the removal of moles upon the face, where the knife is used, the wound may be approximated very nicely by dry sutures.

We shall not stop here to consider the treatment of polypoid growths as they are found in the adenomata and myxomata, but will leave them to be considered collectively.

In regard to the removal of papillomata by medicines, we have abundant evidence that the properly selected homœopathic remedy has oftentimes been sufficient. I may be pardoned for giving the medical treatment last, when we consider that a simple papillomata is harmless; but when we find upon examination a suspicious one which may need other treatment than medical, then the importance of surgical relief is pre-eminent. Helmuth recommends Thuja, Nit. acid, and Calc. carb; Thuja, especially for pedunculated growth, and Calc. c., 3d trit., 2 grs. every night for one week, following by Thuja, 3d dilution, two drops night and morning. The juice of the Chelidonium majus is recommended by Dr. Stevens as an outward application.

In regard to Thuja, we have no well-authenticated proving which justifies its extensive use in tumors, except in condylomatous growths (which are not considered in this paper). Our pathogenesis of this drug is deficient in regard to the various papillary growths, and hence the use of the same has been learned by clinical observations, which have elevated the remedy to a high point.

I would recommend the application of the remedy externally as well as internally. I would suggest, that when prescribing for these growths, you bear in mind all those remedies which show a disposition to cause excessive papillary development, and see if their symptoms do not correspond to affections of this nature. Iodide of potash is recommended by Franklin, or the different preparations of Mercury, Nitric acid, and so on.

It may be inferred that as the papillomata show some defect of the constitution, the remedy selected for the cure of the same must be the one best suited to all the symptoms. Very often a

constitutional defect is being successfully prescribed for when the papillomata disappear. Nevertheless, when we have no defect to correct, the system being otherwise healthy, and the remedies have been faithfully tried, I should advise the removal by the caustic. My plan has been to apply a poultice over night, and the next morning to drop a drop, or a sufficient quantity to thoroughly moisten it, upon the growth, of a solution of nitrate of silver (ten grains to the ounce); this to be reapplied until the growth is removed. Other caustics are recommended, such as Nitric acid, Chromic acid, etc.

ADENOMATA.

From *aden* a gland, and *oma*, a morbid condition. Adenomata are commonly called gland-tumors. In structure, Green says, they resemble the racemose or tubular glands. They consist of small saccules or bubbles, lined with squamous or cylindrical epithelial cells grouped together, being separated merely by a small though varying amount of connective tissue in which are contained the bloodvessels. In many cases it is evident that the development of such tumors is accompanied by an increase of the gland-tissue amongst which they grow, thus producing the mixed forms of adeno-sarcomata, adeno-myxomata.

They originate also from pre-existing gland structures, of which they are simply local hyperplasiæ; springing from the gland-cells proper, they increase numerically and extend beyond their normal localities, the connective tissue being developed with them, and in this manner forming an addition of roughly defined lobules to the gland proper, or in some instances being mere hypertrophies. They do not, as a rule, grow very large, but one in the museum of the College of Physicians is mentioned as weighing twelve pounds. Billroth saw one which secreted milk.

They may be caused by a local injury or by an abnormal condition of the sexual organs; which condition being corrected or pregnancy supervening, they disappear. This form constitutes what was called by Sir A. Cooper, chronic mammary tumor. These tumors are generally painless, but oftentimes produce severe pain like that of carcinoma, being influenced, in this respect, by locality and relation to other structures.

Having, as I said, their origin from gland-tissues, we may find them located on any portion of the body where the tissues are found. Thus we see them on the mucous membranes, forming one kind of mucous polypi, in the parotid, pancreas, liver, thyroid, prostate, testicles, kidneys, ovaries, etc.

The secondary changes which may take place are fatty degeneration of the epithelium, which may give rise to the formation of small caseous masses in the growth, dilatation of the saccules and tubules so as to form cysts, and mucoid softening.

It will thus be seen that the adenoid growths or gland hypertrophies must be, of themselves, harmless; but, Green says, very often mingling with them and forming part of the growth are found cells of a malignant character, which seem to be the result of transition forms and pathological alterations; so that a tumor which is adenoid may subsequently become or develop into (which I think is the better term) cancer. In cancer, Green says, the growth appears to commence by a proliferation of the epithelium within the ducts of the gland, and as the epithelium only subsequently becomes heteroplastic, the determination of the nature of the tumor in this stage is difficult. Also in sarcomatous tumors originating in the connective tissue of a gland, the ducts of the gland, filled with epithelium, are often seen imbedded in the new growth, and thus the appearance of adenoma may be closely simulated.

Green says of the adeno-sarcoma and adeno-fibroma of the mammæ, that they are more common than pure adenoma. In them the connective tissue between the acini of the gland undergoes active changes, and forms a fibro-cellular, spindle-celled or pound-celled structure, within which the acini are imbedded. In many cases it is difficult to determine whether the glandular structure is really increased in amount, while in others it is so abundant that such is evidently the case.

These tumors grow slowly and rarely ulcerate; some have cysts and hence take the name of cysto-sarcoma, cysto-adenoma, etc.

Clinical Diagnosis.—These tumors are generally painless. If in the breast, the axillary glands are not enlarged; the skin has its natural color; there is no pain when pressing on nerves or

from indirect pressure; they do not involve the system and may exist for years without much enlargement; they have their seat in gland-tissue, and from scirrhus may be diagnosed in regard to the skin, which in adenoma is healthy and in scirrhus is mostly fastened down on the tumor.

Treatment.—Bryant says of these tumors that the tissues around them are usually quite healthy and altered only by displacement; they do not invade the neighboring glands; are sometimes multiple, easily moved and do not require removal except from mechanical cause. Thus before removal we can only review the symptoms of the tumors clinically, for, as we have seen, these adenoid growths may be truly innocent tumors. If in the breast, and the skin and tissue are healthy, the general health has not been impaired, and we have as yet had no pain, or if pain being present is caused by pressure, and the axillary glands have not become involved, we may be content to rely upon medicines alone for removal, having known these tumors to disappear spontaneously, or, as has already been stated, upon the supervention of pregnancy. Should a new train of symptoms make their appearance, an increase of pain, or an increase in size, with a dipping in and fastening of the tissues around the nipple, then it becomes imperative to operate at once, and then only can we certainly determine the true nature of the tumor by the microscope. Hence it is a very fine point to decide whether we shall wait until the true malignant symptoms show themselves, or operate whenever there is an adenoma of the breast for fear of the future development of an already existing cancer-cell, which is quietly awaiting the time when its proliferation will take place and its true character be shown.

When such doubts exist I would recommend that a proper trial of medicines and well-regulated regimen be made; and then, if we do not succeed in our efforts at removal, extirpation is the best procedure.

From the fact that all writers say an adenoma may develop malignant growth, a statement which cannot be true unless all growths which manifest malignant properties have them at the very outset, in fact, existing from the beginning (for it is an axiom, according to Bryant (p. 562), that tumors never change

their original nature), it would seem that those adenoid tumors which at first seemed innocent, were, in reality, malignant at the beginning, and, hence, if by operating in the early stage we prevent a formation of malignant growth, why not take the risk and not even wait for a chance of development? I leave this question as I find it. When we can determine exactly the true character of the future growth of a tumor, then we will be more certain in our treatment, whether it be surgical or medical.

Medical Treatment.—I know of no better medication for these tumors than the proper homœopathic remedy, so long as there is a constitutional defect to cure; and what remedy seems to be more strongly indicated than *Mercurius iodatus?* In all glandular diseases it is used, in the swollen and indurated tonsils, in the swollen glands of Peyer. In all diseases where gland structure becomes involved, this or other preparations of Mercury, and sometimes Iodine, are exceedingly useful; not to be given indiscriminately, but after a careful and painstaking investigation of the symptoms.

Conium Maculatum.—The pathogenesis of this drug also shows a marked leaning toward gland structures. According to Noack and Trinks, the chief tendency of Conium is to liquefy and fluidify animal matter both normal and abnormal; "old contusions in which glands are indurated and increased." These are some of the general symptoms. A most careful investigation is necessary before this is given, and then in doses, first high, 30th, and if improvement is manifested, descending in the scale, and with the lower attenuations make also an application on the outside with the tincture. Persistency, I think, is necessary, if we want to do the best medicinally with tumors. Hence, when satisfied one remedy possesses the true similimum we should persevere. Other remedies are, Calc. carb., Hepar s., Arsen., Lyc., Puls., Ignatia, etc.

Surgical Treatment.—In pure adenoma the tumor may be removed by the knife, but should any sign of degeneracy of the tumor itself or its base or its capsule be discovered, the actual cautery or galvano-cautery should be used to finish the operation. The wound should be closed by dry sutures, which are easily prepared, and firm adaptation of the edges of the wound

can be made in a manner preferable to that by interrupted sutures, which produce more or less irritation. The dressings most recommended are Staphisagria, Calendula, Carbolic acid water. If the wound, however, is a clean cut, a simple dressing of water is all-sufficient. My practice is to approximate the edges of the wound by means of the dry suture spoken of, covering with a piece of lint, and placing over that a strip of oiled silk, unless there is signs of more than the usual amount of inflammation, when I make use of either of the articles enumerated and afterward place the patient under treatment with the best selected remedy which may suit the glandular growth and the patient's constitution.

MYXOMATA.

From *Myxa*, mucous, and *Oma*, a morbid condition.

The myxomata are tumors consisting of mucous tissue, which is a succulent connective tissue, the intercellular substance of which yields mucin.

The physiological prototype is found in two situations, in the vitreous humor of the eye and in the umbilical cord. In both the intercellular substance is homogeneous and yields mucin. The microscope shows their cells to be angular and stellate, with long anastomosing tuberculæ; others are isolated and fusiform, oval or round in shape, possessing usually one, in some cases two distinct nuclei. Their contour is indistinct, owing to the refractory nature of the intercellular substance, which is amorphous, slightly granulated, jelly-like, and yields mucin. The bloodvessels, which are not numerous, are readily visible and easily isolated. The development of the myxoma is from one of the connective tissues, adipose being their favorite seat. They may be found in subcutaneous, submucous, intercellular, muscular and connective tissue of the brain, spinal cord, and sheaths of nerves. Their growth is slow, but they sometimes attain an enormous size. The changes which may take place in these growths are, the formation of sanguine cysts by rupture of the capillaries, or the cells may undergo fatty degeneration and thus be destroyed, with liquefaction of the intercellular substance. In character they are soft, often fluctuating, a translucent mass,

poor in blood, and from which a pink or colorless jelly flows on pressure, in which may be seen the elements of their growth. Growing from the sheaths of nerves they constitute one form of neuroma; growing from the placenta they constitute the uterine hydatids; in the nose one kind of nasal polypi. They are generally of benign growth, so that when once removed they rarely return. In the old classification they are called mucous polypi, vesicular moles, gelatinous tumors, etc.

Clinical Diagnosis.—By their soft, jelly-like consistence, having few bloodvessels, and their rapid growth, without pain, unless from pressure.

Treatment.—We advise, in prescribing for these tumors, that the same care be exercised as already spoken of; and hence the remedies should be selected from that class which seems to affect the constitution, not by a destruction of the mucous tissue but by an excessive production of the same. I think it possible that the true remedy may be found for the cure of these myxomatous tumors among that class which show a disposition to produce excessive mucous tissue. Bearing this in mind we remember that Calcarea carb. stands out prominently as one of that class; and what remedy is so often prescribed for the soft polypi?

Teucrium, Dulcamara, Lycopodium, Sambucus, Silicea, Graphites, and many others may be mentioned.

In regard to the medical treatment of polypi, either of the papillomata, adenomata, or myxomata (for we have all these and more varieties forming polypi which are found in the nostrils), the most important procedure is first to be certain that we have a polypus to treat. This can be easily ascertained by the different sized specula, and oftentimes the finger will tell, by touch, the variety. Having satisfied ourselves of the variety and position the remedies should first be tried.

While prescribing remedies I propose that the patient be placed under a different regimen from that they have been accustomed to; if living on meats, etc., I would change to less nutritious diet, substituting milk and cream; if spare, thin diet and using vegetables, give a more nourishing one of meats; changing in this manner the order of their living, but under

no conditions making the change unless the system is well nourished by the food prescribed. An impoverished state of the blood is to be avoided.

If the medical treatment does not succeed, then a resort to surgical means is justifiable. In the soft myxomatous variety, astringents, caustic, tearing them away with the forceps, are the usual means.

Dr. J. E. James makes record of a case supposed to be of the myxomatous variety, cured by blowing powdered Sanguinaria canadensis root upon it. For the other varieties the ligature, or what is better, the écraseur, and the forceps to twist these growths off, are the best means.

Should much hæmorrhage occur, the persulphate of iron will answer a good purpose to arrest it, with glycerine to promote the healing process afterward.

XXVII.

NEUROMATA.

By M. O. Terry, M.D., Utica, N. Y.

Neuroma are neoplastic formations which may be divided into two general classes, the true and false neuroma. (Neuroma verum and spurium.)

True neuroma consist chiefly of nerve-fibres intermingled more or less with connective tissue, which is sometimes soft, sometimes tough, sometimes rich and at other times poor in vessels. From these differences various forms of neuroma result, such as fibro-neuroma, glio-neuroma, myxo-neuroma, etc. It has not been certainly ascertained whether ganglion-cells occur in these neuromata. The origin of the newly-formed nerve-fibres is partly referable to granulation-tissue, and partly to the increase and division of the already existing nerve-fibres. (Heller.)

Wagner says that neuromata consist of vascular connective tissue in for the most part preponderating quantity, and of nerve-fibres; the latter are rarely parallel, for the most part branched and closely interwoven, broad or small, mostly medullated, rarely without medulla, and usually without connection with the fibres of the affected nerve. Many neuromata contain almost only gray non-medullated nerve-tissue, nerve-fibres recognizable with difficulty in their bed of connective tissue, neuroma amyelimcum in opposition to neuroma myelimcum.

Virchow distinguishes the pure neuromata in which the nervous elements preponderate, the telangiectactic neuromata, and according to the kind of interstitial tissue, the fibrous, glious, and mucous neuromata.

According to Förster, the nerve-fibres of neuromata proceed from spindle-shaped cells which arise in the connective tissue, elongate, fuse one with another by their points, and gradually receive contents similar to the medulla of nerves. True neuroma occur almost exclusively in the spinal nerves, rarely in the sympathetic nerves, and still more rarely in any of the cerebral nerves. They occur in varying number and size, although usually as small, rounded, smooth, sharply defined, usually partly solid tumors. They are also found at the cut end of nerves in amputation stumps.

Histological investigation tends to the differentiation of two forms of true neuromata. In one double-contoured fibres are common (neuroma myelimcum of Virchow). These give to the tumor a medullary white aspect, as may be seen in the neuromata that form after amputation. In the other form extremely fine non-medullated fibres are present, which usually form a confused and felt-like mass, strongly resembling fibro-myoma of the uterus. The color of this form of neuromata is gray (neuroma amyelimcum). The histological recognition of this tumor is extremely difficult, and was first facilitated and indeed rendered possible by Virchow. It was formerly mistaken for fibromata, for fibro-sarcomata. A great part of the so-called multiple neuromata belong to this category of true non-medullated neuromata.

Neuromata are sometimes congenital, sometimes of traumatic origin. For the majority no *cause* of origin is known. In families predisposed to neurosis, a certain predisposition to them exists. Their origin in congenital and hereditary states is not infrequently observed, and certain relations to idiocy and cretinism must not be overlooked. Phthisical and scrofulous (though not tubercular) subjects appear to be especially predisposed to the formation of neuromata. A special tendency, or at least a local tendency of the tissues to multiple neuromata must be admitted, though it is unknown upon what this depends. Isolated are more common in women, whilst multiple neuromata occur almost exclusively in men.

Of the direct causes, traumatisms, such as blows, pressure, bruises, and the penetration and retention of foreign bodies in the

nerves, as fragments of glass, points of needles, ligature threads, etc., these have all been observed to constitute causes of neuromata with sufficient frequency to render this action certain.

The symptoms of tumors in the nerves are very variable. Many cases present no symptoms at all, whilst others are the cause of persistent and severe suffering to the patient. Such differences are, however, it is probable, immediately due to variations in the finer relations between the nerves and the tumor. The history of isolated neuromata, if known at all, is usually that of severe and incurable neuralgia; hence the term applied to them of tubercula dolorosa.

Treatment.—Experience has shown that all attempts to disperse or reduce the size of these tumors or to cause them to disappear, either by internal remedies or by external applications, are futile.

Surgical treatment constitutes the only rational method of dealing with neuromata, namely, the extirpation or distribution of the tumor. The only objections are that surgical means are not applicable in all cases, and that they do not protect from relapses and extension of the disease. Extirpation is by far the best method of treatment, and it succeeds best when the tumor can be removed and the nerve left intact. If this be impracticable the smallest possible portion of the nerve should be extirpated; it is worthy of notice, however, that even when a portion of nerve measuring an inch in length has been removed, regeneration has taken place after the lapse of a considerable period. Frequent relapses compel the performance of repeated extirpations and even of amputation. The neuromata that occur after amputation should be extirpated; it is seldom necessary to amputate at a higher point. In multiple neuromata, or where the tumors are deepseated, an operation will be undertaken with caution, or the most painful ones will alone be removed.

XXVIII.

LIPOMATA AND ANGIOMATA.

By John E. James, M.D., Philadelphia.

LIPOMATA.

A lipoma is composed of adipose tissue similar to that found in the subcutaneous connective tissues over the body. When this tissue takes on excessive action or proliferation, and forms in circumscribed lumps or masses, it constitutes a tumor, which consists, anatomically, of cells containing oil or fat globules, which are held together in lobular masses by connective tissue; and the greater or lesser amount of this tissue in the tumor gives the various degrees of firmness found in this class. The growth is surrounded by a thin capsule of connective tissue. When this is formed of an excess of fibrous connective tissue it has received the name of fibromatous lipomata. This tissue has at times been found to have calcified.

A lipoma is homologous; does not recur after extirpation; does not readily take on ulcerative action; does not infect surrounding tissues or organs, and hence is benign or innocent in its character.

It may occur on any part of the body, the trunk being its most common seat, and the back the most frequent portion attacked. I have seen one on the under portion of the thigh, at the lower third, giving the appearance, from its shape, size, and feel, of an extra mammary gland, having at its most dependent part an enlargement looking like an enlarged nipple. I have removed them from the vulva, the nasal cavity, and the axilla.

Their growth is slow, and usually without pain, unless they press on some nerve or sensitive organ. They may attain an enormous size. They occur most frequently between the ages

of thirty and fifty, at the time of life most favorable for the formation of fat.

The diagnosis is not difficult, though they may be confounded with blood-cysts, fibromata, and possibly sarcomata. The slow growth, the age of the patient, the position on the body of the tumor, the general smooth, rounded form, the elastic consistency, the lobular feel, and the mobility beneath the skin, are symptoms or signs which give us its distinctive character. If there has been much irritation to the tumor, or long-continued pressure, adhesions may take place either to deeper structures or the skin.

Treatment consists in extirpation, usually by a straight incision over the tumor, and nucleating or turning out of the mass. An elliptic portion of the integument should be removed if it is very large, sufficient to coaptate the parts nicely. The wound generally heals kindly, though a free discharge is apt to follow.

ANGIOMATA.

Vascular tumors consist of bloodvessels (arteries or veins, or both) held together by connective tissue, which is often mixed with adipose tissue. Under this class it is usual to include nævi, erectile tumors, and aneurisms by anastomosis.

They are classified into simple angiomata and carcinous angiomata. Simple angiomata consist of dilated, small, and tortuous vessels, frequently capillarious, though often new or extra growths of vessels. The color is red, purple, or blue, according as the mass is made of arteries, veins, or both, containing their normal fluid, the excess of arterial or venous blood giving the characteristic color; yet a deeply-seated tumor containing arterial blood may have a dark or bluish color.

The growth is generally superficial, painless, slightly elevated, and small; exceptional cases, however, become quite large. This class comprises nævi, telangiectasia.

Carcinous angiomata consist of fibrous, carcinous, erectile tissue, similar anatomically to the corpus cavernosum of the penis. In these alveoli or carcinous places, freely communicating with each other, is contained the blood, usually venous, which is sup-

plied by a great number of small, tortuous vessels. Their color is generally bluish, and they are mostly superficial, though they have been found in the liver, kidneys, muscles, etc. This class comprises venous vascular tumors, erectile tumors, and aneurisms by anastomosis.

The simple angiomata are almost always congenital, while the carcinous angiomata are rarely congenital, but form in early life, seldom in later life.

Treatment.—The simple form, if they cover a large surface, or have ceased to grow, it is best to leave alone. The treatment proposed for vascular tumors is various: 1. Ligation, if the surface covered is large, more than one ligature being necessary; two or more should be passed under the tumor by needle, and tied so as to completely check the flow of blood to the tumor. 2. Extirpation by scissors or knife, being careful to tie the vessels rapidly, so that too much blood may not be lost. 3. Cauterization by fuming Nitric acid, provided it is on a part where the cicatrix will not be unsightly, or by its contraction interfere with the usefulness of the part. The process of vaccinating on the tumor, injecting coagulating liquids, and even the galvano-cautery needle, have not given results that warrant their use to any extent.

XXIX.

THE HOMŒOPATHIC TREATMENT OF TUMORS.

By J. G. Gilchrist, M.D., Detroit, Mich.

Perhaps nothing so excites the incredulity of opponents of our art, unless it be the proposition to control some of the abnormalities of pregnancy and labor, as to claim success in the treatment of tumors of all kinds by the internal administration of remedies, particularly remedies attenuated (or potentized), as is usual in homœopathic practice. The careful and honest student, however, cannot fail to find in our literature abundant testimony as to the possibility of inducing a cure, *secundum artem*, which cannot be obtained by purely surgical measures, inasmuch as in the latter we only remove the effect or product of morbid action, and do not reach the *fons et origo morbi*. None, perhaps, will deny that, when practicable, a radical cure by the administration of remedies will be far preferable to any harsher or more incomplete methods; but many willing to concede the possibility, from want of proper experimental knowledge are slow to attempt such treatment.

In this present paper it is not deemed necessary to go at any length into special therapeutics, as the proceedings of the *World's Homœopathic Convention*, in 1876, contains two exhaustive papers accessible to every member of the Institute. Furthermore, the writer has devoted so much time and space to the subject elsewhere, *e. g.*, the medical press, and in one or two monographs or pamphlets, that it would involve a simple repetition of what is there advanced, to go into the subject at any length at this time. We must, therefore, be content to treat the subject in generalities, and endeavor to advance arguments going to show the necessity

for experimentation and study in this direction, and give the data upon which our deductions are based.

First. Let us consider what are the causes operating to produce a tumor, with the hope of finding from the consideration of the etiology a reasonable theory upon which the proposition to cure may be founded. The *theories* as to causation are various; almost equally in number with the observers. They may be rendered, however, into two fundamental principles, each presenting numberless variations. We find the vitalist and the physiologist, and, perhaps, on more extended research, we may find that they are not so widely separated as now appears. With this excellent authority for diversity of opinion, it can or need occasion little surprise if the writer has a theory of his own, and embracing propositions from both schools. It must be premised that the conclusions reached have not been hastily formed, but are the result of long study, actual experience, and careful microscopical examination of a large number of morbid specimens. That these conclusions may not fully agree with those attained by other and perhaps more competent observers, need not occasion surprise, and it may be that further experimentation may modify our views considerably.

We will start out with the proposition that tumors are the result of morbid cell-genesis, both as to quantity, quality, and deposition, and that this abnormality may be the result of pluperfect development, of imperfect development, or of simple malassimilation, without any specific taint. One case would, therefore, be an excess of vital function, as in the case of simple hypernutrition; the other as deficient functional activity; the last as an actual deterioration of structure, with exterior functional abnormality. From a consideration of these three classes, or, perhaps, *degrees* of morbid action, it will be evident that the old classification of tumors into three classes is not only natural, but absolutely indispensable. We will, therefore, speak of these families of tumors: *Benign, semi-malignant,* and *malignant.*

It will not be required that we go into a description of their formation, as every practical and experienced surgeon must be already familiar with it. We will find the causes to be, as is usual, both *exciting* (or determining), and *predisposing* (or main-

taining). The first embraces all varieties of trauma that may induce hyperæmia of the part, and call into activity the functions of repair. This will always result in local hyperplasia, which, under favorable circumstances, may become an enduring tumor formation.

The *predisposing* causes are various. Any condition of the assimilating organs, or mental disturbance, by reacting on the organs of digestion, may induce a permanent organization of what might otherwise prove only provisional reparative material. We find cases on record in which exostosis, particularly exostosis of the skull, has resulted from an organization of provisional callus; probably more extended study would reveal many similar conditions in soft parts.

Now, we will find, I think, that all tumors may be divided into three general primary groups, without reference to the morphological elements: *e. g.*, *cystic*, *encysted*, and *diffused*. The first is formed by either an occlusion of the duct of a natural cyst, with an accumulation of the contents, or a hypersecretion of the contents of the cyst, with a patency of the duct. The second, or encysted, is either formed from the condensation of the surrounding connective tissue, forming a limiting or pyogenic membrane, or the solidification of the normal cyst contents. The last, or the diffused, is found to be either the result of infiltration of morbid elements, or a tumor-like hypertrophy. Of the first form we have a common example in some forms of ovarian cyst; the second in ranula, and perhaps glandular tumors; the third, in true lipoma and cancerous growths. We thus find a natural division of the subject to be into three distinct families, for therapeutic purposes.

When we remember that it is *not* uncommon for a benign tumor to become malignant, and that this metamorphosis is only attained after profound mental depression has deranged digestion, and consequently assimilation, it will not be difficult to go a step farther, and concede tumor etiology to be dependent upon faulty cell-genesis, which simple trauma, without a maintaining constitutional cause, could never produce.

With this understanding of the case, we can commence to see that there *may* be a reasonable hope of effecting a cure by heeding the well-known maxim: "Treat your *patient*, and let the

tumor take care of itself." In fact, all the cures reported have been made by remedies selected after interrogation of the subjective phenomena, with, at best, only a partial consideration of the objective symptoms.

Second. We cannot deny that there are cases in which we do not attempt a radical cure by medication, depending upon two conditions.

(*a.*) When we meet a tumor of immense size, growing rapidly, compressing or involving important cavities or organs, as the larynx, etc., humanity demands a speedy removal of the growth, particularly as our remedies, under the most favorable circumstances, require some time to develop their action, which period is one of increasing danger and suffering to our patient.

(*b.*) The other class of cases are those in which the growth of the tumor is arrested, and it becomes, to all intents and purposes, a part of the body, enduring, nourished and maintained as other tissues and organs. In such cases the only process by which such morbid products can be disposed of is by fatty degeneration and absorption, which will be found difficult to effect. Indeed, in many instances an attempt to produce such a change may result in re-establishing the extinct or dormant hyperplasia, and the tumor may take on renewed life, and even become more malignant. The rationale of cure, I take it, in cases of living, growing tumors, or as some say, "immature neoplasms," is to induce a retrograde metamorphosis, a sort of atrophic process, without fatty degeneration being an essential factor. In this case, it is true, we must first have a cessation of development, but it will be observed that is effected short of structural perfection.

Finally. It now remains to indicate the treatment of tumor cases, and the indications will be found to bear a close relation to our views of etiology. If the tumor is a foreign material, introduced by some mysterious external agency, or the result of purely *local* action, unconnected with deepseated constitutional disturbances, local or mechanical treatment can alone be indicated. But if we recognize the neoplasm as a *symptom* of disease, a local effect of a general cause, purely a functional abnormality, it will be at once admitted that to remove such an effect mechanically cannot correct the disease process, can only add a stimulus

to a process already too active, and is not only unscientific, but a practical admission of want of knowledge of our art.

Still, we must not allow ourselves to be deceived in this matter. As long as the world shall stand there will probably be tumors to treat and tumors to cut out. Even when there is reasonable prospect of success by the employment of remedies, circumstances may arise which would prevent our resort to them, and compel us, against our better judgment, to remove them by the knife. Such cases have frequently been before my classes at the University clinic, when outside pressure *compelled* me to operate, where under more favorable circumstances an *attempt*, at least, would have been made with remedies. At other times the surgeon may be so circumstanced with reference to his patient that prolonged treatment is impossible, and the knife may be employed. In short, there are numberless contingencies that may arise preventing medicinal treatment, which should, nevertheless, be faithfully instituted when there is any encouragement.

It will be impossible, even undesirable, to go at length into the subject of therapeutics, which has already been done by Drs. BEEBE and HELMUTH, and the papers are in the possession of the Institute. It will be observed, I think, that tumors fully developed, that have ceased to grow, are oftener cured, if at all, by one of two remedies, viz., *Silicea* and *Sulphur*. In the case of some forms of encysted fatty tumors, we might add *Baryta c.*, to the list. Tumors of slow growth, and while still developing, are cured by *Calc.*, *Baryt. c.*, *Graph.*, *Lyc.*, *Merc.*, or *Phos.* Tumors of rapid growth, while still increasing in size, are arrested and dissipated by *Arn.*, *Con.*, *Sepia*, *Plumb.*, *Stann.*, or *Sulph.* Cysts are found more amenable to *Ars.*, *Apis*, *Rhod.*, *Sep.*, *Sil.*, or *Calc.* Recurrent tumors are cured at times by *Ars.*, *Carbol. ac.*, or *Thuja*. *Bell.* is sometimes referred to as curative in some forms of tumors, but my experience has been that while the more urgent symptoms are sometimes controlled by its use, it will never cure the tumor. Of course, almost any remedy in the Materia Medica may be called for in treating these cases, but after much experience and consultation with others, the list may be narrowed down as above, except in a few exceptional cases.

Let us now inquire how we can determine the curative action

of a remedy prior to the disappearance of the tumor? We will find that the rapidity with which a remedial action is shown in a given case will depend upon the rapidity of the growth; slower in slow growths, and faster in rapid growths. It will, under the most favorable circumstances, require a long time, from days to weeks, for the effect of the remedy to be manifested. We will first note an evident gain in the patient's general condition. The pain, if any existed in the tumor, will become diminished; there will appear quite a troublesome itching or biting of the integument covering the tumor; the tumor will then remain stationary for a long time. Soon there will be a noticeable softening and increased mobility of the growth, with a change for the better in the appearance of the skin over the tumor. Should it have been discolored, it will appear more natural; should it have been adherent, it will become loosened and pliable. Of course increased mobility and softening may indicate suppuration or disintegration; but the symptoms of such an occurrence are well known, and cannot be mistaken. We will now, in many cases, particularly if the tumor is a large one, notice the lymphatics in the region become somewhat enlarged, without pain or inflammation. From this point the tumor will rapidly subside and soon disappear, leaving no trace of its existence behind it.

Remedies can frequently be used with good results, after the removal of semi-malignant tumors, in preventing their recurrence. In closing I will give an account of such a case, of particular interest, as it seems to have formed the text for quite a discussion at the last meeting. The notes of this case have been lost, but, with the exception of dates, my memory is good, and can be relied upon.

At the request of Dr. Dunning, of Corry, Pa., in 1874 (?), I saw a young man, of apparently sixteen years of age, presenting a large, nodulated, immovable and incompressible tumor on the right leg. The mass involved the condyles and all the articulatory extremity of the femur, but did not extend to the articular face or to the bones of the leg. His health was fair, but he did not have a rugged appearance, and nothing in his history would indicate any deep-seated dyscrasia, except the appearance of the tumor. The tumor was diagnosticated as an osteo-sar-

coma, or what I prefer to call a *spina ventosa*. An exploratory operation was made and a small portion of the tumor removed, revealing a bone-cyst, or soft exostosis. Within a month afterwards the patient was seen again, fully etherized, and the tumor exposed by a long incision. It was found to be of the character described above, a thin lamella of compact tissue inclosing a cyst partly filled with loose cancellous tissue. The tumor was, perhaps, three-fourths removed, revealing a communication with the medullary canal. With gouge, chisel, and chain-saw, the tumor was removed piecemeal, until it seemed as if the shaft of the femur was almost entirely removed; at least the portion of bone remaining seemed so thin that I left the patient with some concern, fearing that he might sustain a fracture. *Hecla lava*[6] was given, a dose, I think, four times a day, and the tumor, as far as my knowledge extends, never returned, nor showed any disposition to do so. I was much gratified at the result of this case, as it is well known that such tumors are very apt to recur, or even destroy life, from secondary deposit, or by inducing pyæmia.

In closing I may say that while *Hecla lava* has more than once arrested the growth of bone-tumors, I have not once succeeded in effecting a cure with it.

APPENDIX.

DISCUSSION.

SECOND DAY—AFTERNOON SESSION.

DR. GEORGE A. HALL, of Chicago: *Mr. President:* I wish to speak about Dr. Franklin's paper. If I understood him correctly, he said that he preferred in an operation for carcinoma to leave the wound open; as I did not exactly understand it, I wish to know if in an amputation he would leave the entire surface denuded or closed, or whether he would close it up partially by strips and compresses, or would apply external applications, leaving it entirely free to suppurate. Dr. Franklin is not here, but if I understood him correctly, it was as I have stated. In my experience there is less injury in approximating the surfaces of the wound as nearly as possible, either with the interrupted suture or with strips, and thus holding it until the first stage of suppuration has subsided. This is my universal practice; after the removal of the whole or the needful portion of the parts, I swab the wound out with Carbolic acid or with the Persulphate of iron, in order to excite rapid ulceration or sloughing, including the slight structure that may have escaped destruction from the surgeon's knife. I have found that in those cases where we leave a large denuded surface, as for instance, in a wound measuring from seven to seven and a half inches in length and five to five and a half in width, to go through the tedious process of granulation, it will be not weeks but months before it is healed. I saw a case a short time ago that Dr. McFarland operated upon two years before, in which no cicatrix had formed. There is also danger in this slow process as to the liability of the morbid growth to return. We should allow the new tissue to form and granulations to be developed, keeping the surface soft, and by this method a wound five by seven inches was healed in two weeks or less.

DR. BECKWITH: Five inches in width and seven in length?

DR. HALL: This was so approximated as to hold the edges or margins within the space of an inch. If left open, it would have taken a much longer time to heal, perhaps two or three months.

DR. L. H. WILLARD, of Allegheny City, Pa.: *Mr. President:* I agree with Dr. Hall regarding the advisability of leaving an open wound. I do not think, with Dr. Franklin, that the cancer cells may often be eliminated, for I do not think they would be thrown off so long as pus was allowed to remain in the wound.

My plan is a little different from Dr. Hall's. I remove all the diseased structure, and completely stop hæmorrhage; after that the edges can readily be approximated, and the wound will heal, without trouble, almost by first intention.

DR. J. G. GILCHRIST, of Detroit, Mich.: I have often had cases in which the wound filled up, and afterwards a large abscess formed. I like Dr. Franklin's plan.

DR. WILLARD: The sooner the wounds are healed the better, if they are thoroughly healed. I am always glad to learn any plan that will prevent pain and prolong the patient's life. Of course an operation is the last resort, and we wish the wound to heal speedily, because if left open it is a drain upon the system.

The wound should not be so soon closed as to prevent the escape of pus; all surgeons allow a free opening for that purpose. We should also use constitutional treatment in these cases.

DR. P. A. R. WRIGHT, of Buffalo, N. Y.: Can we not as well use the thermo-cautery as the galvano-cautery.

DR. WILLARD: We find better results in using the galvano-cautery; the wound heals and the patient recovers better; the eschar is not so troublesome, having a more healthy look, and there is no excessive sloughing.

DR. WRIGHT: Did you use white or red heat?

DR. WILLARD: We usually used red heat.

DR. E. D. BEEBE, of Chicago: *Mr. President:* In reference to the treatment of adenoma, I would add my testimony to that already given. I have had a considerable number of cases, and I believe in Conium as the one remedy. I have called these tumors fibrous adenomata of the breast; they are round, smooth, mobile, the tumor sometimes developing in the border and at other times in the centre of the gland. I found no result from the use of Conium in the thirtieth, but have used it in the third, with uniformly good results. I have never used it without noting an improvement, nor have I ever failed within a reasonable time to remove the tumor with this remedy. This experience seems to me valuable. One of the remedies mentioned this morning by the writer of the paper upon uterine fibroids, was the Iodide of calcarea. It is my custom when I have a patient suffering from uterine fibroid, especially if of the intramural or submucous variety, to promise to control, if not entirely remove, the growth with internal medicines. If I had a case of fibrous polypus with

a small neck thoroughly attached, I should not delay recovery by giving medicine alone, but should remove it at once; but in the interstitial fibroid, where surgical interference is so dangerous, I uniformly prefer the internal remedy. I have controlled aggravated cases by the persistent use of remedies, and also cases of retrograde metamorphosis; I think these two classes are more amenable to any form of treatment than other varieties. I have never given iron other than in the third attenuation, which is equivalent to making a solution of the crude drug in water, and giving it in minute doses; the solution of the third decimal trituration would be about the dose I used in sub-fibroids, and which controlled them very promptly and efficiently. My first case was of a very large growth, by which the patient was reduced to the verge of the grave. I feared a hæmorrhage, and gave the first to control it, and commenced using Iodide of calcarea, thinking the iodide would assist in the absorption of the growth. I think the etiology of cancer consists in some fault in the vital functions or nerve-tissue of the body rather than any blood contamination. If the blood becomes vitiated, it is a secondary and not a primary result, and the general system is only affected after the blood becomes poisoned. After a thorough study of the question, I am convinced that it is more a nerve than a blood disease.

Dr. R. Ludlam, of Chicago: *Mr. President, Ladies and Gentlemen:* I have much enjoyed the report of the Bureau of Surgery this year, no doubt because it comes so near the subject-matter of mine. Many of the subjects spoken on have been a special study with me for a long time, and for a little while I felt that the surgeons had adopted subjects belonging to my bureau. Dr. McClelland's paper appeared very practical and useful as an introduction to the rest.

It is very important in treating such a subject to fully understand the classification adopted. Dr. Willard's paper much interested me, especially in reference to the treatment of epithelioma. Whether epithelioma is or is not cancerous, I believe it often amenable to constitutional treatment; its diagnosis should be as early as possible, in order to treat it with hope of success. I have cured two or three very bad cases, one especially so, with Arsenicum iodatum, 3^x, no other remedy being given, and another with Mercurius corrosivus, 6^x, which was a terrible case. This latter patient had ophthalmia also, and was also unable, though having a constant desire, to urinate, which trouble was relieved after taking the medicine for ten days; a year and a half has passed, and she is quite well, having only taken a few doses of the Mercurius corrosivus with no other treatment, excepting to

keep the parts clean. I enjoyed Dr. Winslow's paper, and I know that the pleasure will be enhanced when I can read it. The Institute is to be congratulated upon the acquisition of such a member.

I was proud of Dr. Hall's paper, because it came from Chicago; we are very modest there, but it is with us a family matter. I think he has fully proven to us the action of Secale or Ergotin in intrauterine fibroids, given by hypodermic injection, by which method I have used it considerably during the last four years; this seems the best plan to obtain its full action. In a case brought to me from abroad, of a pedicular intrauterine fibroid, I used Ergot, which agreed with the patient, and diminished the size of the tumor, at the same time controlling all hæmorrhage. I think that in cases of intrauterine interstitial fibroids, Ergot produces peristaltic contraction of the uterus, and thus partially enucleates the tumor.

It is but four years since I began its use, and as a rule I do not report cases, especially of women, inside of four or five years after the cure; physicians reporting a cure within twenty-four hours after ceasing the remedy are not, in general, much to be relied on.

Ergot is an invaluable agent for the control of hæmorrhage, and this applies to most cases of uterine fibroids. We can now dispense with the latest suggestions on ovariotomy, when in six cases, once in Canada, and five times in Europe, the ovaries were removed in patients suffering from uterine fibroid, in order to stop menstruation; four of these cases being successful. Now, if we can produce similar effects with our remedies, we shall confer a great boon on humanity.

I prefer to use the drug in the first decimal trituration, so as to get the active principle.

Dr. Wm. Gallupe, of Bangor, Maine: While I do not wish to refer to any individual, so much has been said about the different forms and characteristics of tumors, with the manner of operating, that I think there should be a few cases reported as having been successfully treated with internal medicine alone. I reported two or three such cases to this Institute in 1857, and they are recorded in the minutes; also others in 1870, and since then, I have reported some to the Maine Medical Society. These were all cured with medicine.

I have cured four very interesting cases of ovarian tumor with nothing but the thirtieth attenuation and higher.

One was of twenty-three years' standing, and the others were of five years and longer.

I have cured four or five cancerous breasts. These cases have been reported.

I am requested to cite a case, and will as well as possible, though I am unprepared to make any definite statement concerning the remedies used.

Some cases were cured with a single remedy, and some with two or three remedies.

I have been much interested in the remarks of all, but I have heard but one case reported cured by the homœopathic remedy.

I think we should do our best to cure without the knife, or we do nothing more than any allopath does.

I cut a tumor out from under the arm, but it returned.

The case of which I wish to speak was one of a right ovarian tumor, of twenty-three years' standing. It commenced when the lady was twenty-five or twenty-six years old, and was supposed to have been caused by a strain. While lifting a sick brother she felt something give way, and was compelled to seek immediate relief. She kept the matter to herself, and a tumor commenced to grow. After a period of two or three years, while playing with a little child he struck his foot across the tumor, and from that time it grew more rapidly. At the end of seven years she went to New York to have Dr. Valentine Mott operate upon it. He said it was too large, and it would be neither prudent nor proper to use the knife, but that she must carry it for the remainder of her life. In 1845 I commenced treating the case, receiving it from the hands of Dr. Clark, of Portland, a member of this Institute.

It was then a formidable-looking tumor, extending down to the pubes on the right side, with a firm adhesion. I prescribed for her for two or three years. Whenever she met with any accident to it, there was much soreness and inflammation, which I could always relieve. At length I found it increasing, and persuaded her to allow me to try and arrest its progress. I did not think I could do more. I gave her Podophyllum peltatum^{30}, which seemed to be the remedy indicated. After the first dose the symptoms were aggravated. I told her if it could make it worse it could make her better. She was very sensitive to medicine, and I had to go higher than the thirtieth.

I took a little of the water already prepared, and mixed it with a tumblerful of pure water, and the next week gave her a spoonful of that; then I let her go for three days without medicine.

She said that at first the medicine made her feel worse, but that afterwards she felt better. So I let the effect of the dose continue. I never gave her a single placebo. She was an intelli-

gent lady, and if I asked her to wait a week she did so. In ten days I gave her another dose of the second preparation. I then stopped, and carried the medicine up two more tumblers, and gave a single dose of that. She said that the last dose did her more good than all the rest. She was quieter than I had ever seen her before.

DR. C. PEARSON, of Washington, D. C.: I wish to refer to one remark of Dr. Gallupe. He said, in speaking of tumors, that the allopaths would have wrought the cure with glittering steel. I do not think the doctor believes that; that is, I think he believes that a tumor with a growth so real should be treated in a different way. I think that he considers that there is something behind the tumor causing its growth. I think it was Helmuth who said that the infinitesimal causes that gave the first and leading impulse to disease were entirely incomprehensible, and that they escaped the scalpel of the pathologist. When the tumor has been removed the cause still remains.

DR. BUCK, of Cincinnati: Dr. Ludlam has remarked that the Bureau of Surgery has encroached upon his bureau, but I am glad to see all the bureaus working in harmony.

I hope less time will be given to the discussion of theories in this than there has been in some of the other bureaus.

A theory has been referred to regarding the vital function as exercised by a nerve. Now we know very little about the vital function, except theoretically, as regards cases of nerve trouble.

This field of investigation is receiving much attention, especially in Europe, and by Professor Kline, and we shall get more light; and I think it will result in a demonstration of the fact that the cure of these tumors depends entirely on a specific remedy, and on our knowledge of the function of nutrition. This function is very important, depending somewhat upon the nervous system, and so far as the nervous system interferes with it so far we have ill health and this complex organization as a result. This class of tumors occurs most frequently in women, especially at or near the climacteric; and we must remember that a very marked change takes place at that time in the nutrition. Professor Foster refers to this function in his physiology, calling it the malabillic function; he refers it to the lymphatic system as a direct source of supply, and as a direct morphological agent in this direction. I am satisfied from my course of reading and investigation of authorities that such is the case in this class of growths.

Now with our remedies, and with our knowledge of hygienic measures, we can control nutrition. Dr. S. Weir Mitchell, of Philadelphia, has made for himself a worldwide reputation by

his researches on nutrition, and he has cured cases that failed under both homœopathic and allopathic treatment by giving them appropriate food, thus increasing the energy and nutrition, and radically changing the whole systemic economy. I have studied his work in connection with the experiments of Foster.

Now by properly understanding these facts we can by proper hygienic influences, together with the homœopathic remedies, effect a cure in this class of cases.

Dr. A. Korndœrfer, of Philadelphia. Mr. President: I want to indorse all my friend Dr. Buck has said upon this subject. A remedy not before mentioned by any one is *Kali bichromicum*, which is very useful in treating these uterine fibroids; I frequently use it, and with good results. I used it in a case in Philadelphia, pronounced by the old school to be in a dying condition. The patient is now living and doing well, while the tumor is so reduced as to give her no trouble. The uterus is about one-third its natural size. I used from the thirtieth to the fifteen thousandth, getting the best results from the higher potencies. Regarding the wonderful cures of Dr. Weir Mitchell, about half his success is largely owing to the study of nutrition, and to the treatment of the system by proper hygienic measures. But many of his cases are simply those of nervous excitability on the part of the patient, assisted by a wonderful amount of imagination, and these patients being wealthy, and used to much pampering, notice symptoms others would not think of. These are some of the horrible growths and tumors that are being cured by Dr. Mitchell.

Dr. Buck: One of the cases to which I referred had been all over Europe, and been pronounced organic Bright's disease. It had been treated and described as organic disease of the liver, with kidney complaint. There was with it a nervous complaint. I treated the case for a couple of years with tolerable success, but I am happy to say that the case recovered entirely under Dr. Mitchell.

Dr. W. H. Winslow, of Pittsburg, Pa.: I understand that there is a change in the local cells of the part. I believe there are morbid processes affecting a certain group of cells, and leaving the rest of the body intact, and I think these influences come not from within but from without. The very fact that we can cure such tumors with medicine is a proof that the disease comes from without, because by introducing agents that come from without we cure them.

Regarding the nervous action in such growths, I think the growth begins in an altered nutrition in the nuclei of the cells. I believe that some single nuclei cannot be detected when they

undergo the first change in the forming cancer, or fibroma, or carcinoma, or sarcoma of which I spoke this morning. A statement has been made that when the nuclei changes from its physical to a pathological condition, we see them minutely through the microscope, and that is the beginning of the disease. I think it is simply the beginning of the lower organization, that in the nervous system, and we know the nervous system has much to do with nutrition, and much to do with many cases of paralysis. We know that disease on one side of the body may have a perfectly symmetrical opposition on the other side, and such cases are not all explained by reflex action, symmetry of the parts, or in nerve distribution. By the great central ganglia lying along the spinal cord there may be a nervous influence from one side to the other. As to where this begins is immaterial, but the growth starts somewhere, and by embracing the group of cells in the spinal cord a sympathetic influence is transmitted to the nerve on the other side, and there perhaps excites it in a symmetrical manner.

I believe the cachexia following tumors to be due to the local disease; not that the tumor is due to any cachexia. Therefore Dr. Pearson will understand my expression of this morning, that the allopathists went into the root of the matter with caustic paste, and I believe that a proof of that statement may be found in the non-recurrence of many carcinomatous and sarcomatous tumors after their thorough removal; and when Dr. Franklin said this mosning that he left the wound open to slough for a long time, I saw that he thus wished to eliminate any flying or unaffiliated cells that had gone a little beyond the region where he cut.

The great trouble in extirpating these tumors is that they send out feelers into the normal tissue, which are hard to find, and which throw out cells into that tissue.

Sometimes the tumor is all removed but yet returns, exhibiting its morbid influence, which will generate its like. Therefore the tumor must be cut out and sloughed out, or, as I think preferable, burnt out with caustics.

Dr. Hall: The case is stated that there may be a straying cell an inch or less distant from the margin of the wound, and that Dr. Franklin keeps the wound open for such cells to free themselves. What causes the separation? What produces the cell half an inch from the margin of the wound? That very same cause would be likely to reproduce the disease. Would it be likely to slough out if the wound was left open?

Dr. Winslow: I think not.

Dr. J. H. McClelland, of Pittsburg, Pa.: It has been said that in my paper I took the ground that tumors depended

on a pure dyscrasia. I think by referring to that paper it will be seen that I merely quoted Mr. Paget in the matter, showing that such an authority looked upon tumors as having a constitutional element; but I think I took great care to remark that I did not believe in the theory of blood dyscrasia, primarily.

Some one asked why more cures of carcinomata and other malignant tumors had not been reported. I think it is because they have never yet been made. I wish, therefore, to consider the operative measures, and I think that after discovering a carcinomatous or scirrhous tumor the sooner we remove the mass from the body the better for the patient, and I believe we can do more with our remedies after that mass is away, for it will become a centre of poisonous influences.

Reference has been made to the thermo-cautery, and I am firmly of the opinion that it is as good as any other; it will produce as good results as the galvano-cautery, and its heat is much more definite.

It would seem that these tumors are independent growths, and yet we all have had experience, time and again, that those which appeared most independent have, when thoroughly treated, disappeared under the use of remedies.

Dr. H. C. Allen, of Detroit: I would like to ask Dr. Gallupe the end of the case of ovarian tumor treated with *Arnica.*

Dr. William Gallupe, of Bangor, Me.: It was a perfect recovery. The tumor could not have been held in a six quart pan when I began, but it disappeared entirely. She has been perfectly well for six years. I have cured cases with Lachesis from the thirtieth up to the five thousandth.

Dr. S. R. Beckwith, of Cincinnati: *Mr. President and Gentlemen:* I cannot understand how any one can take exception to the papers under discussion, for they are singularly well prepared, and bear the marks of much labor and research. I see how other members criticize them, and I must add my own opinion. All questions of doubt have been left in doubt, all questions of experience settled by experience.

It is my majority so far as the Bureau of Surgery is concerned, as it is just twenty-one years that I have been on that bureau. Twenty-one years ago our bureau consisted of three members, and twenty-five minutes was occupied by us at the first session. We urged discussion on all the papers, but at that time I was the only homœopathic surgeon who had operated in this country to any amount.

I reported a case of operation to the Institute, but they did not treat me kindly. I can never forget that, except for those

who are dead. Some of those present then are here now; among them is my friend Dr. Dake.

My friend Dr. Winslow brings an elegant paper; it could not be better; they need him in the Bureau of Gynæcology. That bureau also was started twenty-one years ago, when I was an infant. They speak volumes for homœopathic surgery, these reports we have just heard.

DR. WILLARD: I wish to correct a mistake about my paper. I do not prescribe for a disease but for symptoms, and where it is necessary I operate.

On motion the discussion was closed.

SECTION VI.

REPORT

OF THE

BUREAU OF ORGANIZATION, REGISTRATION AND STATISTICS,

HENRY M. SMITH, M.D.,	New York.
JONATHAN PETTET, M.D.,	Cleveland.
PEMBERTON DUDLEY, M.D.,	Philadelphia.
TEMPLE S. HOYNE, M.D.,	Chicago.
E. M. KELLOGG, M.D.,	New York.
T. DWIGHT STOW, M.D.,	Fall River, Mass.
T. FRANKLIN SMITH, M.D.,	New York.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

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XVII.

A COMPARISON OF OLD AND NEW SCHOOL TREATMENT IN THE HOSPITALS OF NEW YORK.

By Walter G. Cowl, M.D.,

Late House Surgeon to the Homœopathic Hospital, Ward's Island, N. Y.

The positive proof of the superiority of the homœopathic treatment by the comparison of statistics of old and new school hospitals in which a large number of patients are treated, is a verification of the truth of our law, which is not only reassuring to ourselves but a strong argument in the conversion of the old school and its patrons. Such a positive proof is afforded by the records of the Homœopathic Hospital on Ward's Island, New York, and the old-school hospital on Blackwell's Island, known as Charity.

These large hospitals are both entirely supported by public charity and are under the care of the Commissioners of Charities and Correction, the heads of this *department* of the city government. They receive principally subacute and chronic cases; Bellevue Hospital, which is in the city, receiving largely the acute, both medical and surgical. Their statistics are published in the annual reports for the department.

The Homœopathic Hospital received and treated 6376 indigent patients from its opening, on September 14th, 1875, to Jan-

uary 1st, 1878, and therefore affords an ample basis from which to draw correct conclusions.

We shall rely upon the statistics of death for the comparison of the two institutions, as the number of patients cured is not given in the published record of Charity. This will not be detrimental to our object, as in reality it is only from the deaths that exact estimates of the value of treatment can be made. The questions of cure and of improvement or non-improvement are, in the class of cases treated, largely determined by the individual opinion of various persons, and moreover the benefit of the medicine is, in general, inextricably involved with the benefit of a better hygiene; therefore is it the relative number of *deaths* that determines the success of treatment.

The fact that all the patients who enter the public hospitals are examined by a specially appointed physician of the old school and assigned by him to one or another institution, together with the direction given to him to impartially divide the subacute and chronic cases between Charity and the Homœopathic Hospital, insures no better class of cases to our hospital than to Charity; and in fact, notwithstanding the rule to the contrary, the statement of the examining and assigning physician strongly indicates that *we* are not *the favored;* for in his last report (contained in the published report of the department for 1877), we find that while 5372 patients were assigned to Charity and 3571 to the Homœopathic Hospital, of cases of disease of the respiratory system (mostly phthisis and chronic bronchitis), 788 were sent to Charity and 832 to us; whereas of the more desirable surgical cases, 2452 were assigned to Charity and but 1098 to our hospital, and of diseases peculiar to women 144 to Charity and but 18 to the Homœopathic.

Charity received throughout the more interesting, and as the percentage of deaths from phthisis shows, decidedly the less moribund cases. This percentage for the two years (1876–7) was 60 at our hospital, while but 30 at Charity; or in other words, two out of every three deaths at our hospital are from phthisis, while at Charity there is but one out of every three.

Now this does not show that our treatment of this disease is poorer than that of the old school, for, on the contrary, our death-

rate, which has always been the lowest of all the hospitals, proves that we have succeeded in spite of the large numbers of dying cases constantly sent to us.

STATISTICS.

	1876.		1877.	
	Charity.	Homœo.	Charity.	Homœo.
Patients treated	8,621	3,077	9,089	4,475
Deaths	699	187	437	206
Death rate, per cent	8.1	6.1	4.8	4.6
Total expense	$133,506	$53,031	$127,898	$60,014
Daily expense, per capita	0.36	0.29	0.34	0.27
Expense for medicine and liquors	$13,478	$1,612	$12,175	$2,596
Average expense, per capita	1.56	0.52	1.34	0.58

Of all the old-school hospitals under the department, Charity has had the lowest death-rate; always about one-third lower than that of Bellevue Hospital; until the past year, when it was less than one-half. This great difference is due to the fact that Bellevue receives nearly all the acute medical and surgical cases, many of them cases of accident, going there only to die.

From its very beginning the Homœopathic Hospital has maintained a death-rate lower than *any* of these hospitals. During its first year, 1876, its death-rate of 6.1 was exceeded by one-third by that of the Charity; in other words: whereas in every 100 patients treated they lost *eight* by death, we lost but *six*.

During the last year the Homœopathic, like all young hospitals, improved in its death-rate, and surprisingly so, jumping as it were from 6.1 per cent. to 4.8 per cent, a great difference when we consider the extreme lowness of even the higher death-rate for an institution like this *and* the large number of patients treated.

The causes of this improvement are the increased facility and ability for treatment; the increased house staff; a better quality of food; and many added privileges conducive to the well-being of the hospital. These all are the result of the hospital's increasing age, and the rewards for its previous success.

Although the death-rate for last year is less than that of Charity, there is not the great difference of the year before, which

is quite surprising, from the fact that Charity's lowest death-rate *previous* was 7.1 per cent., in 1875. The difference between her ratios of death for 1876 and 1877 is one of 40 per cent. Now this is due to one of four things, a suddenly increased prosperity of society, an extraordinarily healthy year, a secret change to homœopathic treatment, or a transfer of hopeless cases of phthisis in its last stage to some of the other hospitals of the department for phthisis, although phthisis counts almost one-third in their death-rate even at present.

1st. It is certainly not an increased prosperity of society, which, by finding employment for the poor, keeps them from destitution and disease. New York was never so poor as now.

2d. The past unusually healthy year cannot explain the *great* reduction, for we would notice a like effect on the death-rates of the other institutions, which, excepting in our own, we do not find.

3d. The reduction of but one-tenth in the drug bill of Charity, between 1876 and 1877, does not indicate a change to Ringers's or Piffard's homœopathic therapeutics; nor is this the case according to the testimony of patients coming from Charity Hospital, where they still get the mixtures and the bitter medicines.

4th. Thus are we reduced to the belief that it is by getting rid of those who are about to die, that her death-rate is reduced. This is actually admitted by the chief of staff in his report for 1877, which few care to critically read, where he writes (p. 30 of report of department): "There are many causes which have operated to diminish our mortality, among which *may be mentioned* the opening of medical wards at the Almshouse, and the opening of a branch hospital on Randall's Island. The hospitals on Hart's Island have also furnished accommodations for a *large number* of lingering cases."

The branch hospital on Randall's Island receives patients only from Charity.

The Homœopathic Hospital can send a patient to no other hospital unless by special request of that patient, which does not often occur with us; whereas almost daily patients are transferred direct from Charity to the Homœopathic Hospital, sometimes in squads of a score, and suffering largely from phthisis in the third stage.

The resident physician of the Hart's Island Hospital (chronic), in his report for 1877, says (p. 138 of report of department):

"Patients received here during the past year varied some from the class received in former years; they were palpably in larger numbers of chronic and incurable cases."

In his record of deaths we find a large increase in those from phthisis and Bright's disease.

To show that it is from Charity that these incurable and dying cases came we evidence the facts: 1st. That out of 1014 patients admitted to the Hart's Island Hospital in 1877, but 736 were sent from the assigning physician in the city. 2d. That no other hospital, except Bellevue, can transfer patients without their earnest request to Hart's Island. 3d. As Bellevue is a hospital for acute cases, and Hart's Island for chronic ones, but few from Bellevue go there. 4th. The death-rate of the Hart's Island Hospital has increased in spite of the unusually healthy year.

EXPENSES.

In the table before given it will be noticed that not only is our death-rate less, but our expenses also.

The difference between the two hospitals for the two years is, that *five* patients in the Homœopathic Hospital were supported and treated upon what maintained but *four* in Charity.

The average expense for each patient for drugs and liquors during the two years was, as is apparent in the table before given, 2.6 times more at Charity than at Ward's Island.

SECTION VII.

REPORT

OF THE

BUREAU OF ANATOMY AND PHYSIOLOGY,

H. B. VAN NORMAN, M. D.,	Cleveland.
J. D. BUCK, M.D.,	Cincinnati.
E. H. PRATT, M.D.,	Wheaton, Ill.
A. R. THOMAS, M.D.,	Philadelphia.
THOMAS SHEARER, M.D.,	Baltimore.
A. C. COWPERTHWAITE, M.D.,	Nebraska City, Neb.
LEWIS BARNES, M.D.,	Delaware, O.
A. S. HOLDEN, M.D.,	Ward's Island, N. Y.
H. H. BARTLETT, M.D.,	Ashtabula, O.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

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XXVIII.

AN EXAMINATION OF THE DOCTRINE OF THE MINIMUM DOSE AND THE THEORY OF DYNAMIZATION PROMULGATED BY DR. S. HAHNEMANN.

By H. M. Paine, M.D., Albany, N. Y.

There exists in the homœopathic school a very decided disposition on the part of a portion of its members to put forward, as an essential feature of homœopathy, that which is fanciful and visionary. At the annual meeting of the Homœopathic Medical Society of the State of New York, held in February, 1877, a member announced that he frequently prescribed the *millionth* potency of homœopathic remedies. During the past summer I learned that a friend residing in Newark, N. J., was then taking a remedy for the relief of intermittent fever of the *millionth* potency, which medicine had been prepared by the homœopathic physician who prescribed it.

These and many other similar instances plainly indicate a disposition on the part of a portion of the membership of our school to resort to a method of treatment which is evidently non-homœopathic, and, from a conservative homœopathic standpoint, is extremely questionable. They also reveal a purpose to publicly announce to the profession and through private sources their adherence to this novel and ridiculous mode of practice.

These frequently reported cases of alleged cures by the higher potencies fairly opens the question whether the so-called cures are to be regarded as instances of the proper application of the homœopathic principle; for, if these experiences of a portion of

our school are accepted without challenge or investigation, a precedent in their favor will be established, and their authors will soon claim for them equal merit and scientific value with those which follow the administration of material doses of medicine. Is not this, therefore, a question which involves the scientific status of our school? Is it not one which we cannot afford to ignore, or longer refuse to thoroughly investigate? Is it not one which we ought to attentively examine in all its bearings in order to determine whither, as a school of medicine, we are drifting?

If, after careful investigation, we shall discover that the claims of those who resort to this questionable method of practice are well founded, and that the cases alleged to have been cured are treated homœopathically, let us accept them without further question.

But, if we shall be able to prove that this peculiar method of treatment has no real foundation other than the probable magnetic force which is imparted to the medium employed, and which is developed by the process of preparation, then let us honestly give it a correct name, and designate its proper relative position in the department of therapeutics. When this is done we shall be able to clearly distinguish between the application of magnetism or psychology, or a combination of these forces, and the proper application of the homœopathic principle. Then we shall not be groping, as at the present time, in the mazes of medical spiritualism. Then we shall be able to determine whether it is wise for us to engraft magnetism or psychology or spiritualism upon homœopathy.

In the investigation of this subject we are led to inquire, at the beginning, why it is that there exists a disposition to resort to the higher potencies in the treatment of disease, and when employing them, why the very highest preparations are so frequently used? There seems to be manifested by the representatives of this method of practice, an insane passion to vie with each other in using the very highest obtainable preparations.

These questions can be answered only by stating that the foundation of this absurd, peculiar, and unreasonable method of treatment is distinctly stated in the *Organon* by Hahnemann.

Hahnemann promulgated a great *central principle* in medi-

cine, viz.: that of effecting cures by the application of medicines whose toxical effects closely resemble the symptoms of the diseases for which they are usually the more appropriate and natural remedies. He then attempted to deduce from this principle or natural law two corollaries, the *doctrine of the minimum dose* and the *theory of the dynamization of medicines.*

Although Hahnemann claimed that these two propositions were essential and were necessary in order to secure the proper application of the central or governing principle, it is not probable that he promulgated thereby *two fundamental errors?*

An experience of three-quarters of a century has clearly demonstrated the truthfulness and applicability of the homœopathic principle enunciated by Dr. Hahnemann.

The principle, *similia*, was not unknown prior to his time; he, however, offered so reasonable and philosophical an explanation of its easy and natural application, that the number of those who accept it and endeavor to apply it in practice has been steadily increasing to the present time.

If Hahnemann had not attempted further investigation in the departments of medical research, he would have been recognized and remembered as one of the most distinguished of medical men. But, unfortunately, Hahnemann endeavored to establish, as a corollary to the principle *similia*, the doctrine of the minimum dose.

Even in this direction, had Hahnemann, in his efforts to discover the proper homœopathic dose, been content to have recommended the use of medicines in doses however minute, but which still demonstrably contained an amount of material appreciable in quantity, he would have saved himself, his system, and his faithful followers a vast amount of ridicule and obloquy. The lines of professional ostracism would have been far less distinctly defined, and one of the most objectionable features of and greatest hindrances to the progress of homœopathy would have been almost wholly removed.

Hahnemann not only recommended doses so inconceivably small as not to possess, by any known method of examination, the least possible quantity of medicine in a material form, but also, by a series of practical observations, attempted to demon-

strate the specious theory of the dynamization of medicinal substances.

In paragraphs 279 and 280 of the *Organon*, Hahnemann says: "The doses of the homœopathic remedy can never be sufficiently small so as to be inferior to the power of the natural disease which can, at least, partially extinguish and cure, provided it is capable of producing only a small increase of symptoms immediately after it is administered. The doses of all homœopathic medicines, without exception, are to be attenuated to such a degree, that after being introduced into the body they shall merely produce an almost insensible aggravation of the disease."

Hahnemann then gratuitously insults the common sense of his followers by adding: "It is of little import whether the attenuation goes so far as to appear almost impossible to ordinary physicians, whose minds feed on no other ideas but what are gross and material."

Paragraph 278 contains the following: "The question that now suggests itself is, to discover what may be the degree of minuteness of the dose best calculated to render the salutary effects intended to be produced certain and gentle; that is to say, how far the dose of a homœopathic remedy, in any given case of disease, ought to be reduced, in order to derive from it the best possible cure. It may be readily conceived that no theoretical conjecture will furnish an answer to this problem, and that it is not by such means that we can establish, in respect to each individual medicine, the quantity of the dose that suffices to produce the homœopathic effect, and accomplish a prompt and gentle cure. No reasonings, however ingenious, will avail in this instance. It is by pure experiments only, and precise observations, that this object can be attained."

These and other paragraphs are evidently designed to teach the doctrine of the minimum dose; also, that the only possible method by which the *limit* of minuteness can be determined is, by instituting many series of experiments. Although Hahnemann, for reasons best known to himself, did not venture to express an opinion regarding the degree of minuteness by limiting it to certain potencies, still, is it not reasonable to presume that there is a *limit* to the divisibility of medicinal substances, beyond

which no apparent curative effects can be expected. Hahnemann, in his efforts to find the minimum dose, carried many remedies to the thirtieth, and some even to the fiftieth potency. And not content with this degree of reduction in the quantity of medicine, he proceeded to diminish the doses still further, by recommending, in pragraphs 247 to 249, the administration of these high potencies of medicines by olfaction, and even then, in many cases, he permitted the patient to receive only the very smallest portion of an ordinary inspiration.

In this manner Hahnemann proceeded, step by step, going from the lower to the higher potencies, until by resorting to olfaction, he disengaged himself from materialism in medicine.

At this period in his medical career, Hahnemann had carried the potentization of remedies to a degree at which there could be no reason to presume that the medium employed contained the least possible quantity of the original medicine. He was then fully prepared to promulgate the specious theory of dynamization.

Thus, the doctrine of the minimum dose, which an experience of half a century has abundantly proven is not essential to homœopathic practice, led to the adoption of the theory of dynamization of medicinal substances; a theory which has no relation whatever to the proper application of the homœopathic principle; one which is as pernicious as it is false, and as ridiculous as it is harmful. It is not an outgrowth of the homœopathic principle, and has no necessary connection with it. It has as little connection with true homœopathy as with the polarization of light, or with the occupation of the man in the moon. It is as mysterious and unphilosophical as is any other phase of transcendentalism. An experience with it of fifty years has not rendered it any easier of application or more reliable in practice than when it first originated in the fertile brain of Dr. Hahnemann.

The following extracts taken from paragraph 270, reveal the true inwardness of both this specious and subtle theory, and also of its remarkable and peculiar author. Hahnemann says: "In order to have a determinate rule for the moderate development of power of the fluid instances, multiplied experiences and observation have led me to retain *two shakes* for every vial, in pref-

erence to a greater number, which had been previously used, but which *developed the energy in too great a degree.*"

Here we find the theory of dynamization distinctly enunciated in the declaration to the effect that the *degree of development of power*, or energy of a medicine, depends upon the number of times it is shaken in the vials used in the preparation of the several potencies.

This system of regulating the shaking of the vials in order to secure certain desired results, was not designed to bring about a mere dilution or separation and diffusion of the original atoms of the medicine. Something more than a mere dilution was intended. This peculiar and subtle feature is more clearly set forth in subsequent selections.

Just here Hahnemann fancied he discovered an element of weakness in his pet theory; and, by means of the method resorted to for averting the threatened danger, we get a glimpse of the mind-working of this remarkable man.

He continues: "On the contrary, there are homœopathists who, in their visits to the sick, carry about their persons the medicines in a fluid state, which, they nevertheless affirm, *do not in time become increased in energy by the frequent agitation to which they are thus subjected.* This declaration, however, *betrays on their part the want of a talent for accurate observation.*"

Hahnemann suddenly found himself placed in an awkward dilemma. He had earnestly advocated the agitation of single remedies in order to obtain *powerful dynamizations*, and he quickly perceived that his followers would very naturally conclude that if dynamization was developed by the agitation of single vials, it would be developed, in like manner, by the agitation of a number of vials in an ordinary pocket-case.

There were, it appears, even at that early day, homœopathists who imprudently carried about on their persons a number of liquid homœopathic remedies; an act of extreme rashness, and one well calculated to jeopardize Hahnemann's pet theory of dynamization.

If Hahnemann's pet theory was true, those who were constantly carrying liquid homœopathic preparations on their persons would soon possess medicines of immense curative power.

If the curative *power* or *energy* was developed by simple succussion of liquid preparations in proportion to the amount of agitation, those who carried these medicines about on their persons could easily avail themselves of a ready means of obtaining thoroughly *dynamized* (?) remedies with which the most astonishing curative results could be effected. Then, too, how convenient it would be? Each homœopathic physician could easily determine, approximately at least, the number of miles walked each day, and could thereby estimate the degree of dynamization, noting from month to month the steady increase of power imparted to the medicines in his pocket-cases; those which had travelled the greater number of miles coming in time to possess marvellous curative energy.

But these desirable qualities did not follow the constant agitation of remedies carried about on the persons of either homœopathic, eclectic, or allopathic physicians, simply because Hahnemann assumed that they would. What was Hahnemann to do? Many would have innocently suspected that the theory of dynamization was unsound, and after having subjected this or any other proposition, however plausible, to a simple yet conclusive practical test, would have had the candor to acknowledge that they were in error. But the idea of adopting a manly and noble course was not entertained by Dr. Hahnemann.

His argument ran thus: Agitation of single remedies always develops dynamization; agitation of many homœopathic remedies simultaneously will, in like manner, always develop dynamization; therefore, homœopathic remedies carried about in the pocket-cases of homœopathic physicians will, of necessity, always become dynamized. The brilliancy and logical force of this argument is worthy its originator. Of what earthly use were simple practical tests in so plain a case as this? To state the premises was, to the dogmatic mind of Hahnemann, to prove the proposition. Practical tests were as useless as a fifth wheel of a carriage. Hahnemann could perceive no error in the first proposition, consequently he believed the last was logically correct.

It did not appear to occur to Hahnemann, either, that if his pet theory was true, there might be a *natural limit* to its practi-

cal application, or if false, the defect was directly traceable to an error of judgment on his own part. He preferred to defend his pet theory, even when, by doing so, it was necessary to insult his followers by charging them with incompetency. "*This declaration,*" he states, "*betrays on their part the want of a talent for accurate observation.*"

As a specimen of cool insolence this is unsurpassed. His ignorant contemporaries were all unconsciously dynamizing homœopathic medicines by carrying them about in their pocket-cases, but unfortunately they did not possess sufficient sagacity to avail themselves of its practical advantages.

Hahnemann then proceeds to prove the incompetency of his colleagues by describing an experiment which, if true, wholly subverts the theory and process of dynamization; and which, in subsequent paragraphs, he declares it is impossible to accomplish.

He says: "I dissolved a grain of Natron in half an ounce of a mixture of water and a little alcohol, poured the solution into a vial, which was thereby filled two-thirds, and shook it uninterruptedly for half an hour. *By this agitation the fluid attained an energy equal to that of the thirtieth dilution.*"

These extracts from the *Organon* afford a view of the mental characteristics of its author. They evince neither the evidences of greatness, nobleness of character, or the elements of sound judgment.

Hahnemann then undertakes to point out the difference between *simple dilutions* and *real dynamizations*, and describes the latter in terms so vague and unintelligible that it is impossible to determine their characteristics, if anything else than magnetic or other force is referred to.

Hahnemann evidently intends to teach, that because simple dilutions contain a material quantity of medicine they are gross in their elements, hence are not as efficacious as those that are dynamized. He avoids stating in express terms that the superior qualities of dynamized medicines depend on the presence or the amount of material quantity of the medicines employed. The vagueness of the terms he employs force the conviction that the material presence of medicine is non-essential; that dynamized remedies act more satisfactorily because they are not cumbered with material elements.

In the footnote to paragraph 270, Hahnemann says: "*Actual dilutions* are almost wholly confined to rapid and colored objects. A solution of salt or bitter substances becomes always more tasteless the more water is mixed with it, and at length loses almost all taste, though we may shake it as much as we please; and in like manner a solution of a colored substance becomes, by the admixture of more and more water, at least almost quite colorless, and gains no increase of color by any imaginable shaking. These are, and continue to be, the true attenuations or dilutions, but are not dynamizations.

"Homœopathic dynamizations are *real awakenings* of the medicinal properties that lie dormant in natural bodies during their crude state, which then become capable of acting in *almost a spiritual manner* upon our life, that is to say, on our sensible and irritable fibres. These developments of dynamizations in crude medicinal substances are accomplished by trituration of dry substances, and by the succussion of liquid substances. These preparations, therefore, cannot have the term *dilutions* applied to them, although every preparation of the sort, in order to *awaken* and *develop* still further the medicinal properties that *still lie latent in it*, must first be again yet more attenuated to allow the trituration or succussion to *penetrate more deeply into the essential nature of the medicinal substance, and thus to liberate and bring to light the more subtle part of the medicinal power that lies still deeper*, which were impossible to be effected by the greatest amount of trituration and succussion of substances in a concentrated state."

In the following paragraphs, Hahnemann even more clearly points out the distinction between simple dilutions and true dynamizations.

He continues, "What is to prevent the preparer of homœopathic medicines, this should always be the homœopathic practitioner himself, in order that he may obtain *powerful dynamizations*, in place of giving a few slovenly shakes, whereby little more than dilutions are produced, which they ought not to be, giving, for the preparation of each potency ten, twenty, fifty, or even more strong succussions, performed against some hard, elastic body. Thus we obtain, even in the fiftieth potency, each lower one of which has been dynamized with an equal number

of succussions, medicines of the *most penetrating efficacy*, so that each of the minutest globules impregnated with it, dissolved in much water, can be taken in small portions, and must be so taken in order not to produce *too violent effects in sensitive patients*, not to mention that such a mode of preparation *develops almost all the properties that lie hid in the essential nature of the medicinal substance, which thereby alone can attain any activity.*"

In the footnote to paragraph 287, the idea is distinctly conveyed that prolonged agitation of the medicines "*renders the mixtures much closer, and develops the medicinal virtues still further, making them, as it were, more potent, and their action on the nerves more penetrating.*"

It is also stated that "it is wrong to give the vials more than *two shakes* when it is intended to develop the power of the medicine in a *moderate degree.*" So also in giving directions for making the triturations, Hahnemann states, that "the medicines ought to be rubbed down with force during one hour *only*, and the same space of time should not be exceeded in the subsequent triturations, *in order that the power of the medicine may not be carried to too great an extent.*"

The preceding extracts are samples of many others in the *Organon* having reference to the preparation and administration of medicines. It is not an easy matter to conceive of a proper motive which could have induced Hahnemann to put forth a declaration of principles bearing upon the application of homœopathic remedies in terms so abstruse, contradictory, and positively ridiculous. All that part of the *Organon* having reference to the potentization of remedies and their proper application in cases of disease, is scarcely worthy the name of a contribution to medical science. It is not my present purpose, however, to scrutinize the motives of this learned and eccentric person. It is rather to examine and analyze his statements, in order, if possible, to ascertain just what principles he intended to teach, and then determine to what extent an experience of half a century has established their practical utility.

It is difficult to determine the precise doctrine or principle Hahnemann intended to teach regarding the so-called dynamization of medicines, if it was not that by a process of agitation

during the preparation of medicinal substances some kind of curative force is developed and imparted to the medicine *other* than can be reasonably expected to result from a simple division of the drug into the smallest possible proportions.

If Hahnemann intended to teach anything by his meaningless jargon, it was that an *occult force* is developed, the activity of which can be controlled by the manipulator, which force acts curatively long after all evidence of the presence of the medicinal substance in a material form has passed infinitely beyond the comprehension of the human mind.

The principles represented by the term dynamization are stated by Hahnemann in terms so vague and so seldom used in medical parlance, that it is difficult to summarize them. The following, however, are more prominent:

1st. That simple dilutions diminish in medicinal strength and energy in proportion as they increase in volume. Solutions of salt, bitter or colored substances, are not made either more salt, more bitter, or of a deeper color, by any amount of agitation or trituration.

2d. Simple dilutions are not dynamizations. Dynamized medicines cannot be properly called dilutions.

3d. The medicinal properties of drugs are only partially developed in the lower potencies.

4th. By means of the higher potencies, those produced by repeated triturations or succussions, passing from one potency to another in regular order (the process of dynamization), the essential nature of the medicinal substance is *more deeply penetrated*, and is *thereby liberated*, and the *more subtle part of its medicinal power is brought to light.*

5th. The development of curative *energy* or *power* other than that arising from a minute division of the material by the process of agitation, which energy or power is increased in proportion to the number of *shakes* applied, or, in other words, the amount of agitation to which each preparation is subjected.

6th. A few *slovenly shakes* produce little more than simple dilutions. *Powerful dynamizations are produced by fifty or more strong succussions performed against some hard elastic substance,* thereby causing them to possess *the most penetrating efficacy.*

7th. Dynamizations are real awakenings of dormant medicinal properties, which, when developed, *act almost in a spiritual manner.*

8th. By means of vigorous dynamization, *a single minute globule of the fiftieth potency* becomes so powerful that its effects *will be too violent unless it be dissolved in much water and administered in small portions.*

9th. The essential nature of medicinal substances cannot attain activity, except when developed by vigorous dynamization.

10th. Vigorous dynamization develops *almost all the properties that are hidden in the essential nature of the medicinal substance.*

11th. Vigorous dynamization *renders mixtures much closer, more potent, and their action on the nerves more penetrating.*

12th. Moderate dynamization requires only *two shakes* of each potency. *Medicines which have received more than two shakes per potency have had their energy developed in too great a degree.*

13th. Triturations should not be continued longer than one hour per potency, lest the power of the medicine (dynamization) be carried to too great an extent.

14th. It is impossible to develop a high degree of dynamization by the greatest amount of trituration or succussion of crude substances.

(*Per contra.*

A solution in the proportion of two grains to the ounce acquired equal energy to that of the thirtieth potency by being agitated uninterruptedly half an hour.

One proposition a flat contradiction of the other. Inference. The uselessness of the whole series of preparations from the second to the thirtieth potency.)

15th. Homœopathic physicians who carry liquid homœopathic remedies about their persons are constantly dynamizing (?) them, but do not perceive any increase of energy developed thereby, *because they are deficient in accuracy of observation.*

These propositions, formulated chiefly in Hahnemann's own terms, in order the more accurately to express his fanciful theories, constitute a strange mixture of a small amount of truth and an enormous surplusage of error.

The old story comes forcibly to mind of a remark made by one elderly lady to another. Looking over her spectacles, she said: "I have been thinking, and I do not know, but it appears to me I am of the same opinion I were some time ago, and then I were undecided." In like manner I am quite undecided whether, after all, Hahnemann was not actually endeavoring to play a huge practical joke upon his professional associates, in order to test their credulity, by reciting, Gulliver like, an account of his fanciful musings.

History informs us that the prophetic utterances of the Delphic oracle controlled the destinies of nations for upwards of three centuries. The light of modern chemistry reveals the fact that the incoherent statements, supposed to be derived from supernatural sources, were really produced by the inhalation of noxious gases. We cheerfully throw a mantle of charity over so ridiculous a spectacle, and excuse the well-meant but misplaced confidence. But what can we say in behalf of those members of our school, who, in the flood-light of science of the present day, are still groping in the mysterious and uncertain domain of psychology, in the vain endeavor to comply with the contradictory and incoherent utterances of a representative of modern medical transcendentalism, an avowed spiritualist in medicine?

It is a matter of astonishment that the unintelligible, contradictory, unphilosophical, and practically useless recommendations of Dr. Hahnemann regarding the dynamization of medicinal substances, should, at the time they were promulgated, have been indorsed by the homœopathic profession; and it is even more surprising that, at the present day, a respectable number still claim for them the least degree of scientific importance.

A clergyman frequently resorted to a simple, and to himself a satisfactory expedient, whenever obscure passages from the Bible were presented for explanation, by announcing that "inasmuch as learned commentators disagree regarding the meaning of the paragraphs in question, *let us look the difficulty boldly in the face and pass on.*" A similar and apparently as satisfactory an expedient has been, and is still being, resorted to by the homœopathic school. *We have been steadily looking the dynamization difficulty boldly in the face and have passed on.* That is to say, while a

majority of homœopathists have not accepted the theory of dynamization, *they have not opposed it.* They have accepted homœopathy, and have endeavored to properly and faithfully apply it within the limits of that which is supposed to be *material medication.* Such is their regard, however, for all the precepts enjoined by Hahnemann, that they have not ventured upon a discussion of the merits of this important question. Hitherto they have preferred to await the results of further investigation.

An analysis of the paragraphs which embody Hahnemann's efforts to express his idea of the peculiar changes developed in the medicines by the process of dynamization, reveals the frequent use of the following terms and phrases: *Developed the energy; increased the energy; real awakening of the medicinal properties that lie dormant, which then become capable of acting in almost a spiritual manner; penetrated more deeply into the essential nature of the medicinal substance; to liberate and bring to light the more subtle part of the medicinal power that lies still deeper; medicines of the most penetrating efficacy; properties that lie hid in the essential nature of the medicinal substance; renders the mixture much closer; develops the medicinal virtues still further; develops the power of the medicine.*

Hahnemann makes frequent use of the words *energy, power, awakening, essential nature, subtle part, penetrating efficacy, medicinal virtue.* Why this ambiguity of expression? Hahnemann seems to have been at a loss for proper words with which to clearly express his idea of the changed condition of the medicine produced by dynamization. What was Hahnemann endeavoring to teach, if not that some kind of *curative force* was communicated to the medicine by the dynamizing process other than is derived from a simple minute division of atoms? If this was his purpose, why did he make use of expressions so vague and ambiguous, when a matter regarding the welfare of the human family, one of transcendent importance, depended on a correct understanding of the *principle* involved in the process he attempted to elucidate.

If the medical profession could not comprehend the principle underlying the process of dynamization, they could not apply it intelligently. They would be resolved into mere machines, and

would automatically repeat the process without the ability to profit by the results of their own experiments. This is precisely the condition in which we find them at the present day. Hahnemannians are dynamizing medicinal and non-medicinal substances, and they explain the process by the same terms employed by Hahnemann. Hahnemann said, *real awakening, essential nature, subtle part, penetrating efficacy,* and devoted Hahnemannians repeat, parrot-like, *real awakenings, essential nature, subtle part, penetrating efficacy,* as regardless of the principle involved, if any exists, as if they were engaged in the empty mummeries of pagan idol worship.

Hahnemann did not use an ambiguous expression when he stated that dynamizations are *not* simple dilutions. Why was it so difficult for Hahnemann to define and clearly express the change he assumes is developed in the medicinal substance by the process of dynamization? If he intended to convey the idea that the process of dynamization developed *immaterial force,* why did he not state his views on this point clearly and in ordinary medical terms? Why are we left in doubt regarding the real meaning his words are intended to convey? If he was in doubt regarding the change developed by dynamization, why did he not honestly say so? If he was ignorant of the *modus operandi* of the curative force developed by dynamization, the fact is discreditable to him. If he knew that he was dealing with magnetic or psychological forces, singly or combined, and disguised the fact by ambiguity of expression, his course was a dishonorable one. In either case the verdict is against him.

If Hahnemann had had the courage, the manliness, and the honesty, to frankly communicate his views in clearly defined medical terms, his followers could have easily pursued the same line of investigation, and, after further trials, either have confirmed or set aside the theory of dynamization. Such a course would have been noble, and worthy of respectful consideration by the whole medical profession. Instead of this prudent course, Hahnemann made use of obscure terms and phrases, words that are of doubtful meaning and difficult of satisfactory explanation, and has, thereby, thrown over the subject a glamour of mystery and vagueness, which to many persons has an irresistible charm.

The only reasonable conclusion at which we can arrive regarding this singular process is, that Hahnemann firmly believed that dynamization developed simply magnetic or other occult force; hence he purposely resorted to the use of terms and phrases of doubtful meaning, in order to give the method a shading of mystery. Is it not also probable that he believed that the good results of a more thorough development of the process of dynamization would prove of benefit to mankind?

By the adoption of this plan (one of doubtful expediency), Hahnemann allured his followers into a trackless wilderness, and then left them without guide or compass. Evidently it did not occur to Hahnemann that there was a possibility of a *natural limit* to the minuteness of the material dose, beyond which, if action should occur, it could not be reasonably ascribed to the medicine.

Hahnemann has instructed us, in paragraphs 279 and 280, to enter upon a series of experiments in order to ascertain the greatest possible tenuity of the homœopathic dose. He has not warned us against the danger of excess of zeal in this direction, except by stating that the medicine "shall merely produce an almost insensible aggravation of the disease."

In his effort to avoid the excessive medication of the allopathic school, Hahnemann seems entirely to have overlooked the danger of error in the opposite direction. From the time Hahnemann announced his specious theories regarding the doctrine of the minimum dose, and its congener, dynamization, to the present day, his followers have endeavored to carry out his instructions to the letter. A ceaseless round of trials were then inaugurated, which are still in full tide of successful experiment. Potency upon potency, measured by the hundred thousand, have been piled one upon another, until the accumulation is appalling. At first the two hundredth was considered an extreme point; soon the thousandth potency was reached; and then the course was a rapid one to the ten thousandth, the hundred thousandth, and quite recently the millionth potency.

This degree of attenuation or dynamization does not appear to have the slightest shading of the ridiculous to strict Hahnemannians. To them the experiments are *veritable facts* of the

utmost significance. They are now, even after having reached the millionth potency in their vain search after an ultimatum, as earnestly seeking the minimum dose, as they were when they started upon their jack-o-lantern chase. They are not better prepared to give a satisfactory or philosophical explanation of their insane course than they were when they set out. They are as busily engaged as they ever were in the labor of accumulating *facts*. They do not stop to work out results by inductive reasoning, or deduce principles from the vast accumulations of recorded experiences gathered during the past half century. Hahnemann directed them to observe and record *facts* illustrating the efficacy of dynamized remedies, and *facts* they are accumulating with unabated zeal. Without doubt they will continue pursuing the same prescribed routine during many years and perhaps ages to come.

At stated intervals the prudent business man strikes a balance sheet, in order to ascertain his exact pecuniary standing. In like manner, have we not, as a school of medicine, arrived at a position at which a retrospective view will enable us the better to ascertain our exact relative position in the broad field of medical science. Is it the part of prudence to take our bearings in order to determine whether, as a distinct school, we are making a steady and satisfactory progress, and whether we are moving toward sound conservatism, or drifting in the uncertain and mazy atmosphere of transcendentalism.

Inasmuch as the advocates of dynamized substances do not volunteer to analyze the results of past accumulations, let us venture to suggest an experimental examination in order to ascertain, at least approximately, what principles, if any, have been educed; also to determine whether there are good and philosophical reasons for multiplying experiments showing the truth or falsity of the theory of dynamization. In this examination it is proper to assume that there has been accumulated a supply of material abundantly sufficient in quantity and quality to clearly indicate the value of the process of dynamization, to demonstrate its relation to the principle similia, point out its applicability in cases of disease, and approximately determine the limits of its curative action.

The following propositions are offered for consideration, in order, chiefly, to promote the approximation of correct conclusions regarding the results of past observations, and also to indicate to true Hahnemannians, who are now pursuing this line of experimentation, the more salient points which may require further investigation:

1st. The fact having been established by Hahnemann and his numerous followers that cures do follow the administration of high potencies, what positive or presumptive evidence can be furnished showing the presence of medicine in a material form in any potency above the fifth centesimal, or, at farthest, the tenth.

2d. If there is no positive or presumptive evidence of the presence of medicine in a material form in any potency above the tenth, is it necessary to limit the selection of substances for dynamization to those only which have toxical properties?

3d. Have not experiments clearly proven that substances supposed to be inert and even nutritious, those having no toxical properties in their crude state, are, when dynamized, quite as efficacious curatively as are those having active poisonous qualities?

4th. If inert, nutritious, or innoxious materials act beneficially when properly dynamized, is it not clearly established that the only curative force possessed by such substances must necessarily have been developed by the process of dynamization?

5th. If it is proven that the curative quality of the medium employed depends solely on the process of dynamization, does it not follow that the active principle is none other than magnetic or other occult force?

6th. Is not the homœopathic law of cure expressly stated in the *Organon* to be founded on provings of substances which possess toxical qualities, produced by these substance when taken in poisonous doses, without regard to the influence of magnetic or other occult force?

7th. Are not those only to be considered true homœopathic provings which are obtained without the aid of magnetic, dynamic, or other occult force, and are not all others non-homœopathic?

8th. If provings derived from dynamic or magnetic forces are non-homœopathic, to what relative position in the department of therapeutics do they belong?

9th. If provings derived from non-homœopathic sources, and the alleged cures resulting therefrom, are encouraged or indorsed by homœopathic medical societies, is there, on that account, any liability to detriment to the homœopathic school?

10th. If the homœopathic school may encourage or indorse non-homœopathic provings and cures, under the thin guise of dynamic, magnetic, or psychological forces, why is it not as proper and as expedient to encourage and indorse precisely the same round of unsatisfactory and unscientific series of experiments which have been pursued three thousand years by the allopathic school?

11th. If the use of dynamized substances and provings obtained therefrom is non-homœopathic, is it not eminently fitting, and in point of fact necessary, for the homœopathic school to designate them as such, and henceforth refuse to recognize, accept, or indorse them, either directly or tacitly, except as non-homœopathic remedies and provings.

Hahnemann had the most ample opportunity to demonstrate the practical value of his pet theory. By promulgating it his name has become the synonym of that which is visionary and fanciful. His disciples have blindly yet implicitly followed the course he directed them to pursue. It is proper, therefore, for us to investigate and endeavor to arrive at correct conclusions regarding the practical results of this strange and visionary scheme.

Has the theory of dynamization, as applied by Hahnemannians of the present day, proven of the least practical benefit to the human family? Have good results followed its application other than such as are daily and hourly occurring under psychological influences without the slightest intervention of homœopathy?

If the general acceptance of the homœopathic system would have been beneficial to humanity, has not this ridiculous feature of Hahnemannianism, by retarding the adoption of homœopathy, been signally and positively detrimental to the true interests of

the human family? Has not Hahnemannianism (dynamism) proved a dead weight to the progress of homœopathy, and is it not now chiefly responsible for the non-acceptance of homœopathic principles by the medical profession, and the existence, at the present time, of rival schools, and the jealousies growing out of the maintenance of separate medical organizations?

These propositions being accepted, is not the conclusion inevitable, that when the homœopathic school shall have formally discarded this singular phase of modern medical transcendentalism by a declaration to that effect, it will be entitled to, and will with far greater probability receive, the respect, the confidence and the approval of a much larger proportion of the membership of the medical profession?

A summary of the foregoing suggestions, in the form of a preamble and resolutions, is herewith presented:

WHEREAS, The theory of dynamization set forth in the *Organon* has, in the past few years, developed in the homœopathic school a peculiarly extravagant and extremely questionable method of preparing homœopathic remedies, which seems to be clearly without explanation upon any known principle other than that derived from magnetic or psychological forces; and

WHEREAS, The accumulated experience of the past half century has demonstrated that the process of dynamization of medicinal substances, described and recommended in the *Organon*, is neither consistent with the principles of the homœopathic school, or reliable or satisfactory in practice; and

WHEREAS, It would appear that sufficient time and an abundant opportunity has been afforded for furnishing conclusive evidence showing the scientific and practical value of the theory of dynamization of medicinal and non-medicinal substances; and

WHEREAS, No satisfactory reasons have been adduced in support of this fanciful theory, and no trustworthy evidence of its claim for homœopathic indorsement has been furnished; therefore

Resolved, That we deem the theory of dynamization to be essentially non-homœopathic, and, while it may be occasionally appropriately applied in practice from a psychological standpoint, it is, in the opinion of this society, still as obscure as to its origin and development, and so uncertain as to its application, and has so little apparent connection with the proper application of the principle *similia*, as to warrant the conviction, after repeated and carefully conducted trials, continued through many years, that it is unworthy the confidence of the homœopathic profession, and, from a homœopathic standpoint, should not receive the indorsement of the homœopathic school.

XXIX.

HEREDITARY DESCENT.

By H. B. Van Norman, M.D., Cleveland, O.

I make no pretensions as to much knowledge on the subject of hereditary descent, nor shall I attempt in this brief article to prove or establish its laws, but rather to provoke discussion and get new light on so important a subject.

There is scarcely a doubt but that all acknowledge, to some extent at least, the laws of heredity; but to bring it home practically into one's own family; to believe and obey its laws; to have its truths govern one's life, even when inclinations are otherwise enlisted; to understand fully that one's own existence, with good, bad, or indifferent propensities, has come from parentage, and shall again to children descend, is, perhaps, to not a few, an unpleasant question.

There are but few laws without apparent exceptional cases; but one naturally expects a colored child from colored parents. The red man of the forest for father, and his squaw for a mother, will, without doubt, produce a regular square *papoose* for a child.

These things are about as certain to follow as that the farmer expects to reap a harvest of wheat where wheat has been sown, or that the oak tree, true to itself, will develop on its branches the veritable oak acorn.

This law must extend over all the elements and functions of the human organism, even back through all the ages of mankind, and the various changes and conditions subject to such a lengthy period of time.

The internal strength and harmonious action of the vital forces,

or the internal weakness and disorder of the vital forces, as well as the external appearances and special characteristics of the individual case, are all handed down from one generation to another. All living beings have developed in them the power to reproduce themselves, and to stamp their image indelibly on all their descendants; or, in other and more familiar language, "*like begets like;*" or, as Dr. W. Y. Cowl has wisely expressed it, "*similia similibus generantur.*"

Then, according to the above law, it inevitably follows that we are largely the products of past time, and that our physical organism as well as our intellectual capacity have been and are, to a very great extent, woven for us, and, of course, independently of us.

The means within our reach of improving our race have been comparatively enshrouded in darkness, on account of, first, the delicacy of the subject; as for instance, who dare lift the warning and directing hand to those about to marry, should it interfere with cherished plans? Secondly, *love, fancy, fascination* or *policy*, which surmounts all opposing obstacles, must and will marry regardless of hereditary consequences; and thirdly, LUST, that bane of society, whether permitted to run riot in the married or single relation, which tramples down all the sensitive and finer feelings of one's nature, and of the object embraced, and looks only and absolutely to the gratification of the sexual passions, and cares for nothing else.

One can investigate and apply wise laws and correct principles to the improvement of stock, but the avenues to the bettering of mankind, applying the same laws, are entirely closed. In most cases, a man in seeking a wife, or a woman a husband, loses sight of all hereditary principles which the stock-raiser observes, and is wholly led by feeling or policy; and the result in too many cases is degeneration instead of elevation, and the children are lower in the scale of intellectuality and physical stamina than their parents.

The father should realize that upon him depends the ability to stamp the child with life, with vigor of body and mind, leaving the mother to foster, nourish and care for the developing embryo, giving to it her lovely nature. To the mother is given

most of the intellectual training after, as well as before, her child beholds the light of day, and of course, in a great measure, she alone is responsible for the moods, morbid feelings and early impressions received. A child can scarcely be more than ordinarily intelligent when its mother has a weak mind, even though the father may have been more than an ordinary man. I know a family of five children, all married, who are scarcely up to the average of men and women.

The father, being well educated, was a very powerful man, both in physical and intellectual capacity, and retained his powers even up to a very advanced age. The mother married when seventeen, her husband being forty; she had but very little culture and no education, and was considered a weak-minded woman; hence, notwithstanding the ability and age of the father, the children fell far short of being his equal.

Should a child be so unfortunate as to have both parents weakly in body and mind, he could amount to but little, and would be an object of pity.

A good substantial family always remains so, unless an outsider, unworthy of marriage, gets into the fold and perverts its good name and standing in society.

It takes both good *seed* and good *soil* in order to produce a good crop, as well in the animal as in the vegetable kingdom.

When, therefore, the seed is good, and the soil rich and faultless, we may, and have a right to, expect excellent fruit, even the best in the market.

So, also, in the human species, when both parents are vigorous, have pure blood, and active and powerful minds, we should expect no ordinary child; and of such have our great men and women of all ages been born.

It requires the united strength and principle of both parents for the formation of a great and noble offspring.

No ordinary woman ever gave birth to an extraordinary child; so, therefore, every great man had an extraordinary mother. Franklin and Lord Bacon had not only strong-minded fathers, but especially were their mothers of an intellectual cast of mind.

Webster's grandparents, as well as parents, were intellectually strong; hence a star of the first magnitude when he was born.

Milton married unfortunately, and hence his children were only of an ordinary class, while his parents were eminent on both sides.

There must have been, no doubt, a great sameness in the first few generations of our race; but as generation succeeded generation, and different temperaments and peculiarities came together in the father and mother, the children, besides receiving the impress of the parents, developed in themselves a new compound of characteristics entirely different from either parent; and these peculiarities and faculties have been reproduced in the children of each and every succeeding generation until the human race presents to-day a most wonderful conglomeration of peculiarities, talents, characteristics and idiosyncrasies, entirely unknown to the earlier generations. This might be illustrated by the following. Adam and Eve having had each one distinct thought, these thoughts were transmitted separately to each of their children, and the children having received a new idea in addition, there were three for each of the children. It will be easy to follow this figure for a few generations, but to have it extend to the present time would be impossible. (If, in the intellectual world, new developments are constantly following each other, so also in the physical being, new diseases, compounds of the old ones, are continually being formed by successive unions.)

Virtue and long life are twin sisters; so are vice and premature death. One is to be courted, while the other is to be shunned.

I am wondrously impressed with the importance of this whole subject, and ask myself the question: Remains there longer any doubt but that, should both parents possess any given faculty, and whether they wished or not to impress the child with the same faculty, would not the child have that faculty in a more perfect degree than either parent; and would it not be especially so, should the parents desire it and cultivate that faculty, previous to and during gestation?

Therefore, by inheriting the strength, propensities, faculties and diseases of both parents in a greater degree than either, it will be seen how it may be that children are better or worse than the parents, simply by realizing fully the laws of heredity. Following up this thought, supposing the parents were quite young

and very amative, and did not try to control their animal passions, but made the marriage bed a bed of lust, would there not be great danger of the children becoming licentious?

Or again, suppose the parents are possessed of a great amount of destructiveness, and this propensity remains unchecked, but rather cultivated by the two, by following pursuits favoring its cultivation, then how about the children?

Should an objector arise, I would answer by asking him: Would not a river be larger after having formed a junction with one of equal size?

Is not the labor of two, of equal or varied strength, greater than that of one alone? If the laws of heredity be accepted as true, then it follows and obviously too, and is a general declaration of nature, that the mature are born of the mature, and the green of the green, as well as the strong of the strong and the weak of the weak.

To establish life is no small matter, and if parents have the power when proper unions are made, to propagate and strengthen certain traits of character, or gifts, or attainments, and to modify others at will, then it at once becomes a serious matter to become a parent.

If the generations succeeding us are elevated and established in a higher state of existence by our purity, virtue, goodness, and intellectuality, then indeed would life be a grand success. But if, on the other hand, life be given to mortals when the tendency is hopelessly downwards, then would life be worse than a miserable failure.

On the one hand, children might have cause to be thankful for good parentage; but on the other, to regret and bewail the wretchedness brought upon them. Yet, of course, in all cases, one should be thankful for an existence which can be made better. What terrible laws, and how unchangeable they appear to be?

It seems to me, however, that there is every inducement held out to intelligent mortals in the laws herein considered, to arouse one from a state of indifference, to say the least; and it ought to inspire one with the thought that one's efforts and influence can benefit the race and can never be entirely lost.

The very highest aspirations of man should be the elevation of the race, by, in some way, influencing the birth and education of the child, so as to elevate and make him as perfect as possible. It is supposable that one is not held responsible for what one cannot help; and as far as one can behold the case it resolves itself into this: do right, and the best one can, and all will be well; do wrong, and the worst one can, and all will be wrong.

Persevering effort, with the divine aid, can succeed in subduing all the evil propensities of the human heart.

Twenty-five years since there lived in a city a happy family, consisting of father, mother, and three children. The husband met with reverses in business, and left his family for a season, his wife being two months pregnant, and obliged to furnish the necessaries for the family by sewing. Those were dark days, and the wife and mother struggled hard with poverty, with a heavy and broken heart.

The character of that unborn child was being influenced by existing circumstances, as a life of unhappiness and forebodings, of sighs and tears, the young lady can now testify to. To use her own language, "there is a cloud similar to midnight darkness continually hanging over my life, and I but seldom see a ray of sunshine through the impenetrable gloom, and I frequently feel like giving up the struggle and seeking some easy way in which to leave the world." The three oldest children have happy dispositions, as also one born to the parents since fortune once again smiled upon the family.

This young lady, as well as her parents, are fully aware of the cause of her sufferings. And I imagine had this mother known at the time what she does to-day, her daughter would have been saved this sad experience.

Mothers all over the land are doing just what this mother did, and I believe, when they come to know the consequences, many children will be saved from suffering untold agonies and a withered life.

Mrs. L. is the mother of nine children, the six eldest being boys, bright and intelligent. During the fourth month of her seventh pregnancy she was very greatly shocked by an old lady falling down in an apoplectic fit. This lady demanded Mrs. L.'s care

and sympathy for some three months, when, in the third fit, she died.

In due time a female child was born, and without any apparent cause, at the age of eighteen months, she commenced to have convulsions, and at intervals of thirty days has a slight paroxysm, while at intervals of twelve months she has a severe epileptic fit, which has continued up to the age of twenty-two, without interruption.

This unfortunate girl has two younger sisters who are all right, as are her brothers before her, leaving but little doubt in the case as to the cause of her affliction.

Thirty years ago there lived in an adjacent city a highly educated and intelligent couple, who were very much attached to each other. As time sped on the happiness of the two seemed to be complete, and every one expected a speedy and happy marriage. But, alas! the *love* was there, but the marriage was postponed for thirty years, and is to take place this month; the couple being now about fifty years of age, and the lady having passed the climacteric period in safety. I only add that this interesting lady and gentleman were *cousins*, and feared the laws of heredity.

If intellectuality creates in the mind an aversion to children, then it were better for the perpetuity of the race if education were not as general. Hatred to children is being gradually brought about by mothers seeking every means imaginable for the destruction of their offspring, hating the child unborn; the mind dwelling night and day, asleep or awake, on the unholy idea of how the fearful work of abortion can be accomplished the safest and best. Not this alone, but daughters are taught and assisted by ungodly parents how to do and what to do in order to the accomplishment of the work. Would to God mothers would be as interested and attentive in teaching their daughters the nobler things to be accomplished in life. If this kind of knowledge shall increase, how many generations, think you, will it take to entirely wipe out this intelligent and thus educated American race?

There is a warfare to be fought, and this generation is in the midst of the battle. The physicians are the generals, and will

they not lead the American nation up to victory? This cannot be done without American-born children, and they must be children born in American families, or the victory will not be ours.

A mother tried various means suggested to her by her would-be female advisers for the accomplishment of the heinous crime of abortion, but all to no purpose. Physicians were applied to, but, as you may imagine, physicians were not as expert in that kind of business thirty-five years ago as to-day; and perhaps it might be said, truthfully too, that years since physicians possessed more conscience. Be this as it may, this woman failed to accomplish her designs, and the child was permitted to remain in its natural home until nature refused of her own accord to keep her longer, and she was born in the natural way. This child, though intelligent, has grown to womanhood, and has always been, these thirty-five years, a perfect child-hater. She still declares, "Should I become pregnant, I would get rid of the child, or die in the attempt." What a pity such a life, otherwise noble and good, should be dwarfed by inheriting such a morbid condition.

Investigators of natural science have demonstrated, beyond successful contradiction, that throughout the animal kingdom, the "survival of the fittest" is the only law that vouchsafes thrift and perpetuity to the race. Any one can observe, in the commercial world, that a good article always supersedes a poor. In the literary world intellectual ability always has and always will take the place of the individual of small and uncultivated calibre.

Mr. Joseph Cook says: "Hereditary depravity is a fact of science, for there can be no doubt that corrupt propensity is stimulated by inherited corrupt blood. Can nature be justified for the sternness of her rules as to contagiousness of hereditary diseases? What do the superior powers mean by the majestic irreversible laws of transmitted morbid condition? In the common growths of disease there is fastened upon certain vices the great seal of God Almighty's wrath. What does nature mean by the terrific straightforwardness of heredity? Evil sometimes falls on the innocent.

"From the position where we now stand we may behold,

above the truth of man's inherited evil propensities, the certainty of his power of victorious self-amelioration, under the impulse of a spirit that is in him, but not of him. Heredity suggests fate. Conscience teaches freedom. Even Plato taught that the black horse before our chariots may be controlled by the white horse with which he is mated and with the charioteer."

The subject of heredity does not necessarily teach fatality, for all depraved tendencies can and must be overcome by the power, also inherited in every human soul, no matter how bad, to cultivate good tendencies and shun the depraved.

I will close my paper with the following sentiment, "It is the divine right of every child to be well born."

XXX.

PERFORATE FORAMEN OVALE.

By A. W. Holden, M.D.
(Chief of Staff, Homœopathic Hospital, Ward's Island, New York.)

It has long been held by standard authorities, as a fully determined fact, that a perforate condition of the auricular septum in the adult human heart, was not only incompatible with a state of health, and whenever existing sure to be characterized by certain unfailing indications, and markedly those of cyanosis, but that its presence must inevitably be wholly opposed to the normal discharge of the cardiac functions, and likely to be followed by an early death. If the question had ever been under discussion, it would seem important that it should be settled. As it has not, however, and in order to provoke inquiry and further investigation in this interesting field of research, the writer herein presents the results of a number of post-mortem examinations made during the past year in the Homœopathic Hospital at Ward's Island, New York City, in which the foramen ovale was found open, and in some instances to a very conspicuous degree. The history of these cases furnished no indication of the presence of this remarkable lesion during life, nor was there, so far as the very precise clinical records show, any disturbance of the circulation, or irregularity of the cardiac sounds, or other symptoms noted down, which characterized the existence, or which could be considered pathognomonic of, this patulous condition. If no error has been committed in these investigations, it would seem that we were amply justified in questioning the correctness of the theories embodied in the following quotations.

In *Gray's Anatomy* (American reprint of 1863, p. 699), where speaking of the presence of the foramen ovale as one of the peculiarities of the vascular system of the fetal life, it is stated that "it attains its greatest size at the sixth month." On page 701 it is further stated: "At a later period (of fetal life), as the separation between the two auricles becomes more distinct, it seems probable that some slight mixture of the two streams (*i. e.*, of venous and arterial blood) must take place." Again, on page 702, in speaking of the changes in the vascular system at birth, the same author says: "The foramen ovale becomes generally closed by about the tenth day after birth, a valvular fold rising up on the left side of its margin, and ultimately above its upper part; this valve becomes adherent to the margins of the foramen for the greater part of its circumference, but above, a valvular opening is left between the two auricles, which sometimes remains persistent." On page 693, in the description of the annulus ovalis, it states: "A small slit-like valvular opening is occasionally found at the upper margin of the fossa ovales, which leads upwards beneath the annulus into the left auricle; it is the remains of the aperture between the two auricles in the fœtus." Inferentially therefore the osteum auricularum, whenever existing in the adult, must be an abnormal condition, and prejudicial to the proper functional offices of the viscus.

In the work upon morbid anatomy by Professor Thomas, of Philadelphia, the following opinion will be found recorded upon page 86: "Malformations of the heart are extremely rare in adults, or even in children that have passed the earlier days of infancy. They consist frequently in arrest of development of the auricular septum, or in other words of a patulous foramen ovale, which by permitting of a mixture of arterial and venous blood upon the left side of the heart, results in early death. I have in several instances found the foramen imperfectly closed in the adult heart, but the opening has been so small, only sufficient to permit the passage of a probe, as to offer little or no obstacle to the proper performance of the heart's function. Malformation of the heart is undoubtedly one of the many causes of death in utero, which might be demonstrated by a post-mortem examination."

In the *Cyclopædia of Practical Medicine*, edited by Professor Dunglison, the names of a large number of eminent modern writers are given to sustain the view that a perforate foramen ovale, except in fetal life, is not only incompatible with perfect health, but is accompanied by a cyanotic condition, the result of a "loss of balance between the effective forces of the two sides of the heart at the time of birth."

If a perusal of the post-mortem record here cited shall be sustained by subsequent examination of the cadaver, may it not rather be inferred in these cases that, as the left heart is the stronger and more powerful in its contraction, and the systole and diastole of the two hearts synchronous, if there is any transfusion of the two streams, the arterial current has the mastery, and so the health is not impaired, and for a like reason there are no indications of cyanosis? And, therefore, it is only in the rarer instances, when the opposite condition prevails, that the health is affected or impaired by this abnormal condition.

AUTOPSY 1.—Mary Shay, age 33, native of United States. In hospital 36 days.

Heart.—Circumscribed fatty degeneration of apex; perforate foramen ovale; both ventricles slightly dilated; mitral valve thickened, the others normal.

Lungs.—Catarrhal phthisis in the third stage. Other organs displayed nothing of note.

AUTOPSY 2.—James Newton, age 37, native of United States. In hospital 4 days.

Heart.—Foramen ovale perforate, otherwise normal; other organs normal.

Death resulting from falling from a building.

AUTOPSY 3.—Charles Devoe (insane), age 22.

Body.—Marked asthenia; costal cartilages soft and easily cut.

Lungs.—Broncho-pneumonia of one lobule; great œdema of both lobes; hypostatic congestion of right lower lobe.

Heart.—Aorta one-half inch in diameter; foramen ovale perforate and one inch in diameter; ventricular walls very anæmic; valves normal.

Kidneys.—Right kidney and ureter entirely absent.

Head.—Thickening of membranes, effusion of serum in arachnoid spaces, and air in the vessels of the cerebrum.

AUTOPSY 4.—John Brennan (insane), age 32, native of Ireland.

Costal cartilages ossified, and xiphoid appendix double.

Heart.—Normal; foramen ovale perforate and reticulated.

Lungs.—Emphysema of both lobes of left lung, with congestion and induration.

Kidneys.—*Left*, large transparent tumor six inches long by four and one-half inches wide, containing about one pint of fluid; ureter inflamed. *Right*, diminished in size, capsule adherent, surface greatly congested, and presenting a granulated appearance.

Cause of Death.—1st. Cirrhotic nephritis and general paresis. 2d. Uræmia.

AUTOPSY 5.—Jennie Biers, age 28. In hospital 54 days.

Heart.—Perforate foramen ovale constituting a canal three-fourths inch long and one-fourth inch in width, leading transversely through the septum interauriculum; valves normal, except that the mitral orifice admitted but two fingers.

Lungs.—Catarrhal phthisis, third stage; very many small cavities.

Liver.—Enlarged to twice its natural size.

Kidneys.—Congested.

Cause of Death.—Phthisis.

AUTOPSY 6.—Mary Molloy, age 26.

Blood.—Very fluid.

Heart.—Foramen ovale perforate, oblique in direction, and one-fourth inch each measurement.

Lungs.—Anæmic, with partial hepatization.

Intestines.—Congestion and ulceration consequent on typhoid fever; lymphatic glands much enlarged and congested.

Cause of Death.—Typhoid fever.

AUTOPSY 7.—Ann Lake, age 29. In hospital 27 days.

Heart.—Foramen ovale perforate, and measuring three-eighths by one-eighth inch; valves normal; marked post-mortem coloration of endocardium; aorta slightly atheromatous.

Lungs.—Catarrhal phthisis third stage; many small cavities; partial consolidation.

Intestines.—Mesenteric glands enlarged and hardened.

Spleen.—Small and friable.

Ovaries.—Small; fimbria firmly adherent; minute cyst of right ovary.

Cause of Death.—Phthisis.

AUTOPSY 8.—George Washington Henner, age 11 days.

Heart.—Foramen ovale slightly perforate.

Head.—Sinuses full of black blood; reflected layer of arachnoid congested; accumulation of cheesy pus in subarachnoid cellular tissue; solid mass of pus in right lateral ventricle.

Cause of Death.—Suppurative meningitis.

AUTOPSY 9.—Michael Cassidy, age 39, Ireland, laborer.

Heart.—Right ventricle dilated; foramen ovale three lines in diameter.

Lungs.—Catarrhal phthisis in first, second, and third stages.

Liver.—Fatty infiltration.

Cause of Death.—Catarrhal phthisis.

AUTOPSY 10.—Margaret Krupp, age 56, Germany.

Heart.—Tricuspid valves slightly thickened; foramen ovale perforate, and two lines in diameter; aorta atheromatous; slight thickening of aortic valves.

Cause of Death.—Cerebral apoplexy.

AUTOPSY 11.—Michael Gleeson, age 42, Ireland.

Head.—Venous congestion of pia mater over posterior portion of brain.

Heart.—White patch of connective tissue, one-half inch by one-fourth inch, remaining from old pericarditis; air in right heart; foramen ovale one-eighth inch in diameter; partial fatty degeneration.

Lungs.—Universal firm adhesions, congestion and œdema.

Spleen.—Three times its normal size; intensely congested.

Kidneys.—In similar condition.

Cause of Death.—1st. Traumatic erysipelas. 2d. Paralysis of medulla oblongata.

AUTOPSY 12.—John Connors, age 40, United States.

Heart.—Weight, five and one-half ounces; empty; foramen

ovale one-eighth inch in diameter; slight thickening of mitral valves.

Lungs.—Considerable accumulations of mucus and muco-pus, with several adhesions.

Stomach.—Enormous gaseous distension.

Intestines.—Markedly congested.

Cause of Death.—Typhoid fever.

AUTOPSY 13.—Gumal Fischer, age 54, Germany.

Heart.—Weight, eight ounces; foramen ovale slightly perforate in an oblique direction.

Lungs.—Numerous cavities and spaces of consolidation.

Liver.—Weight, two pounds six ounces; congested; fatty degeneration.

Cause of Death.—Phthisis.

AUTOPSY 14.—John Fallen, age 23, Ireland.

Pericardium.—Greatly dilated.

Heart.—Both ventricles dilated, and filled with post-mortem clots; valves normal; foramen ovale perforate, and three lines in diameter.

Larynx.—Ulcerations of the true vocal chords and arytenoid cartilages.

Lungs.—Phthisis in third stage; numerous vomicæ.

XXXI.

ANATO-PHYSIOLOGY IN THE HEALING ART.

By Lewis Barnes, M.D., Delaware, O.

The form, formation and use of organs cannot well be separated; and, since they are together in fact, they should be, I think, in description. Physiology and anatomy should be treated in the same work. The coming textbook will most likely answer this demand.

Anato-physiology is the science of function or vital movement, of which abnormal or disorderly movement is but a variation; but orderly movement is health, while disorderly action is disease. Diseases, therefore, are *disorders*. They are "sick physiology." Simply this, and nothing short.

We need not say, however, that vital action, diseased or otherwise, originates here. It does not follow that life results from "nutrition and assimilation, and must be traceable even from the organic elements upward through all the morphological changes . . . . rather than downwards from the nerve-centres; and that where this will lead in regard to the origin and destiny of man," belongs "to the unknown and unknowable problems of existence." It may even be true that the process itself of nutrition and assimilation is a kind of reflex action from higher and prior agencies. There may be a soul connected with this, for anything that science reveals to the contrary. True, we can discover no channel by which influences can pass from immaterial to material substance. But nerve and muscle are not continuous, and yet there is an influence going or leaping from one to the other. Induced currents of electricity spring from their primaries, not

only without conducting-wires, but apparently by the help of insulation. We need not, therefore, be pitied by our wise brethren as of unsound mind, if we presume that matter and spirit may be distinct and discontinuous, and power still pass from this to that.

Thus it may be that diseased or disorderly passions of an immaterial, mental, or spiritual nature, may tend to disorganize the body. Minute fibrils will give way till death results. Hence, though diseases may begin in the mind, they do not end there. They become physiological at last. And this is when we, as physicians, have them to deal with.

And here, at their physiological ends, we strike them with physical weapons. If two passionate persons, for instance, abuse their affectional nature until syphilitic corruption appears on the flesh, we treat them with such remedies as are able to induce characteristic ulcerations, warts, eruptions, copper-colored spots, bone pains, etc.

Most diseases, moreover, are attended with fever. They are allied to heat. Some of them are heats. Where else can they be more effectually met than in their ravening physiological manifestations? The blazing points are proper places to quench fire.

Still, eminent men among us are greatly afraid of pathology. They insist that disease is purely dynamical, by which they seem to mean spiritual, and, therefore, it calls for correspondingly dynamical treatment. They speak of pathological doctors as materialists, and of the pathological "livery" as very odious. And yet these men themselves treat diseased bodies with drug remedies. But they have an idea that drugs can be so immaterialized as to meet their view of the case. How? Simply by dilution or division. They can be divided and redivided until they rise to the form of dynamic spirituality! As if that which is material in its whole, can be anything else in its parts, even if reduced to its ultimate atoms. Upon this evident fallacy they build their fabric.

But the evidence by which it is known that superior dynamical virtue rises with incomprehensible division is quite as marvellous as the effect of the division. Take an illustration: We

look into Allen's great *Cyclopedia* and find seventy large pages devoted to the medicinal wonders of *common salt.* These amount in number to just 2900. Among these "provings," we find that a girl 23 years of age, took one globule of the 1000th potency and stopped eating salt in her food. The third day afterwards, at 12.30 of the clock, her face was "red in patches." On the seventh day there was redness, swelling, and heat of the "left ala nasi," which was "worse when near the fire." On the tenth night "she felt almost as if losing her reason." On the fifteenth, there was "headache across the forehead as if she had recieved a blow." On the sixteenth, "she could not lie on her back, because then it felt as if something was drawing from forehead to occiput;" and she "felt very sick, retching, slight vomiting in the evening," and at night she was afflicted with "constant laughing, everything looked so ridiculous." Thus, after sixteen days of suffering, from one pellet of highly spiritualized salt, the mischief culminated in laughing hysterics. It does not seem to have occurred to our wise men that some of her trouble might have come from leaving off so necessary an article of diet, or from anything save that wonderful pellet.

The purely scientific mode of using knowledge so obtained is no less peculiar and marvellous. It must be particular. No generalizations are admissible. The patient, therefore, to meet this proving, must be a girl, about 23 years old, in a merry hysteric condition, who after feeling sick, has felt something go through her head from before backwards, whose head ached as from a blow about one day before that, having felt five days previously almost like losing her reason, and who, about seven days before this, at 12.30, had red patches on her face, and a sore on the left side of her nose that smarted near the fire. When you find these things, proceed promptly to give the girl the very least bit, the minimum dose of salt, and if she ever gets well, note it as a triumph of pure homœopathy and scientific skill.

I am not exaggerating these matters. Great volumes are put into our hands, made up largely of such principles and provings. And these we are required to study, study, study, and follow, follow, follow in our practice.

If we find ourselves in a strait, not knowing how to get hold

of the proper totalities, or if we discover too many totalities and know not which to choose, we are permitted by some of our wise men to take keynotes, around which the right totalities will be sure to cluster. But they cannot teach us how to tell the keynotes.

If we seek help in physiology and tangible Materia Medica, in the light of *common* sense, we are upbraided as pathological materialists, and as no "homœopathicians," as allopathic mixers, or as eclectics.

But there is no good reason, in all the domain of thought, why the law of similars cannot be as well applied to physiological knowledge as to any other, to the lower potencies of medicine as well as to the higher, to alternations as well as to single remedies.

Our conclusion therefore is that we are not materialists, from the fact that we recognize the effects of abnormal force in disordered appearances pertaining to nerves, flesh, bones, and blood; nor for applying tangible remedies to these tangible effects. You are not dynamical immaterialists because you try to disregard physiological action, and dream that you are above material things when you get a little way up towards the atoms of which matter is composed. Nor are you a homœopathist from the mere fact that you strive to reduce your remedies to a spiritual state, and rely upon each one singly and alone. If two remedies are more or less homœopathic to a given case, and if a person can be a homœopathist in the use of either, why is he not in the use of both? If one man is an eclectic because of selecting a low potency, or more than one remedy for alternate use, why is another man not an eclectic when he elects a high potency and a single drug? Let our men of dynamic wisdom answer these questions before heaving brickbats. Let our motto be: With charity for all, with malice towards none; with firmness in the right, as God gives us to see the right.

SECTION VIII.

REPORT

OF THE

BUREAU OF PSYCHOLOGICAL MEDICINE,

SELDEN H. TALCOTT, M.D., ... Middletown, N. Y.
T. L. BROWN, M.D., ... Binghamton, N. Y.
S. LILIENTHAL, M.D., ... New York.
HENRY R. STILES, M.D., ... New York.
H. BARTON FELLOWS, M.D., ... Chicago.
ST. CLAIR SMITH, M.D., ... New York.
C. G. RAUE, M.D., ... Philadelphia.
A. P. WILLIAMSON, M.D., ... Middletown, N. Y.
JAS. W. HAINES, M.D., ... Waynesville, O.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 5.

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XIII.

THE MATTER-MOTION OF REMEDIES PSYCHOLOGICALLY CONSIDERED.

By T. L. Brown, M.D., Binghamton, N. Y.

"In truth, since atoms of things in all are mixed,
And matter's various forms are various fed,
Much it imports how atoms compounded are,
With what affinities and motions endowed,
Since the same elements constitute the air,
The sun, the earth, and animals, and plants,
And other things by unions various:
As in our verse we many letters see,
Common to many words, although the words
Differ in sense and sound—so much is wrought
By varied changes of constituent parts.
But elements that true primordials are,
Much more can many combinations take,
Productive of the varied world of things."

A REMEDY is any form of matter indispensable in the cure of the sick.

The limit of knowledge is, our present guide as available or certain. When taken into the living human body each remedy has distinct relative motions, peculiar to itself, producing typical and distinctive results. No other medicinal substances seem to have the same molecular motive attraction or repulsion for like tissues and organs. Nor can one potency of the same remedy do exactly what another lower or higher could accomplish. The forms of matter which originally make up the human body may become medicinal, when taken in an improper quantity, not suitable for correct combinations to form healthy organic structures. Too little or too much will modify our bodily forms and functions in a line of disease.

Atomic and molecular motion, producing by contact the nec-

essary combinations to form a blood-cell, a brain, or a man, gives us all our conceptions of creation.

The molecules, however, need to be of a requisite size, and be brought together under certain exact circumstances, or form and function will not be sustained. While sufficient air, water, and food are timely supplied to man, he still needs alternate motion and rest, or a condition of health will not be attained or continued. No remedy of the Materia Medica can supply the motions and uses of air, water, food, exercise, rest and sleep. Nor can the presence and motions of a remedy be supplied by any other form of matter, and bring the same result.

But for these apparent conclusions, based upon demonstration and fact, all our use of medicine and our practice of hygiene and sanitary knowledge, would pass into the realm of myth and fable. The smallest forms, when in contact under requisite condition, induce motions resulting in natural forms of still larger dimensions.

Man's origin is but the result of matter motions, induced by previous very minute forms of matter in contact under the influence of light and heat motions.

Contact of the atomic forms of matter seem the only traceable origin of all men or medicinal agents.

To name intelligently the origin of the first condition of matter independent of known form and motion, now cognizable, will be a task of the future the egotism of the scientific man has not attempted to declare. To know, as much as possible, the circumstance necessary to the correct combination of the forms of material under consideration, is to be skilful and reliable as a physician. Every honest test of any dilution or form of matter, from the smallest to the greatest, will give some kind of knowledge to the observing practitioner, likely to help solve the problem as to what will better remove disease and sustain health. The attenuated remedy uniting with similar minute forms of the pabulum of which the blood is composed, wholly eludes our cognition, and at most only yields to us only objective and subjective phenomena. So far as remedies are concerned in this strife of knowledge, we think it requires all the forms of medicine distinctively and fairly tested in order to accurately reach the truth as to which

uniformly produces the necessary curative motions. Hence the charity and the harmony of thought needed by all classes of differently educated physicians, to fairly test each the other's ideas of right, especially when intelligently presented. No medical creed, law, or prejudice should prevent an honest trial of any new method which may come of the failures of the past.

Motion is not an entity, but a relation of matter which causes it. No one now knows how small a form it takes to fill the smallest space. The value of matter-motion, either as food, drink, or remedy in the care of the sick, depends upon the minutest division of its particles, as demonstrated by use, not judged of through the myth of theory or the fluent roll of the imagination. Light, heat, and electricity seem nothing more than the motions of matter, and are quite necessary to the formation of other forms of medicines, foods, human tissues, organs and functions. When we learn the right form of a remedy by its observed use, the result we desire, it alone can produce, will be at our command as certain as the sunlight colors the rose.

All is due, seemingly, to the matter-motions of the remedy. Matter and motion are always co-existent. One does not exist without the other. One form of matter moves another. All disease, in our view, is the result of such motions of matter forms as disintegrate and destroy the organic structures of the body. Disease has a material basis, if we attempt to settle the cause. It often seems but the motion of matter at the wrong time and in the wrong place. There is no such existence, to me, as an immaterial remedy. Remedies are material forms in motion, in or near the body.

Our law of medicine, which unites us in harmonious effect to cure the sick, confirms in practice our ideas of the necessity of certain very minute forms and motions of remedies. Even mind motion, which to me seems nothing more or less than the molecular brain motions, is but our recognition of facts as to the real forms and relative motions of every known thing which could help keep us in a conscious state. To make plain our order of thought, it is quite necessary to avoid all ambiguous words, and learn how correct and certain all the similar combinations of matter will produce similar results. Dispute is honestly im-

possible where our experience can be confirmed by demonstration. The science of medicine wholly depends upon our correct use of material in its various forms and motions. Our ideas, so far as we know, are only the motions of brain molecules of matter under the influence of object, of impression. At no time does the mind appear to exist independent of the brain existence. No disease or health motions without certain forms of matter.

To know how to use the various primary minute forms of matter is the most important knowledge in our art.

Nutrition, as a life-sustaining process, quite nearly solves and controls the event of health or disease. For force or power are to me only words meaning motion of matter. No force, no power, no motion without matter. No remedial form of matter without *motion*, as the power and force thereof. I cannot distinguish a difference between the true meaning of the three words. Matter-motion is all. When we give the highest dilution of a remedy, we are giving matter, and getting motions peculiar to the form of matter used. None but those who have fairly tested the high dilutions are good witnesses. Our whole existence appears based upon the one unexplained union of the fittest molecules of matter entering into our bodily composition.

Simply an aggregation of the most minute forms of certain kinds of matter, our tested remedies in some forms disturb, in other forms assist, by their contact motions, the elementary combinations requisite to health.

Observation has established the fact that certain dilutions and potencies cure better than others. According to time and quantity of matter combinations, the organic structures of the body uniformly change. Be the change ever so slight, it modifies in a like degree the functions of the organ. As a whole, or in part, man is but matter in motion. Even his thought is only the molecular motion of brain-matter caused by object contact impressions. Gunpowder will not explode and produce a flash of light, if not brought in contact with the matter-motions of fire.

Brain-matter must communicate with forms of matter sometime external to itself, or thought will not be produced. Who can think of a nothing as a something real? A something, not matter, or the motion of matter?

Remedies change when in contact with the brain, its capacity to receive and retain the matter impressions, or again imperfectly reproduce them.

Other minute forms of material are first needed to form a brain, all of which originate outside of its organic structure.

Past observation has not solved many of the perplexing questions which now perpetuate two distinct schools of medicine, although we find both testing the smaller forms of matter in the more attenuated range of remedies with greater earnestness than at any previous period in the history of medicine. An honest test is the basis of truth. It breaks the chains error has placed upon us by the assumptions of our more dictatorial teachers. Who among us desire to continue stumbling, or disputing over the doubtful meaning of the words dynamic, force, power, superficies, principle, moonshine, high, low, regular, irregular, or vital, while there are faithful men in the profession, honest and true to test and record the facts of their experience?

The physician who by testing both sides of a question has gained the diamond thought, laughs at him who tries to destroy it by assumptions and misrepresentations. Why call any man's experience with either high or low dilution remedies false, before you have honorably tested in a like manner? It is very often the man who is not quite sure of the diamond, who raves loudest to save being cut by it.

You who know and have demonstrated that the law of "similia" is the diamond law of our art, can better afford to favor the liberty of medical thought and action.

We must not forget that our great leader, Dr. Hahnemann, became a medical heretic in order to prove and verify the truth of "similia" and the efficacy of smaller doses.

The curative merit in the matter-motions of our highest attenuations would have still lacked such witnesses as Drs. Dunham, Bönninghausen, Hering, Lippe, Guernsey and others, but for our noble pioneer.

Who will say what shall be the better system of medical treatment one hundred years from to-day? Think for one moment of that of one hundred years ago.

Compare then popular medical practice, so crude, with the present more rational treatment of the sick.

Our law of cure, so often proved, will be better understood and more correctly practiced by the coming physician.

Judging by the great number of educated adherents the law of similia has gained from the old school during the last fifty years' trial, we have good reason to conclude that only some vastly better discovery could take its place, especially when we think of the immense change it has effected in the practice of the whole allopathic school.

Resolutions or majority-votes will not change the matter-motions of homœopathically applied remedies, or the fixed law that has led us to their better use in the more attenuated forms.

By giving a larger liberty of practice to each member of our school, we shall encourage less restrained investigation and give all an opportunity to fearlessly present their new experience for further test. While many are now satisfied with their present attainments and results, others desire to find, if possible, some better methods. Genuine medical progress is not the child of dictation or medical theories. What we know should alone be authoritative, whatever be its source. Is there anything in the universe but matter or the motion of matter? As thought and investigation have not reached a final limit, we look reasonably for an answer.

Our present knowledge of matter in its tested forms and motions controls our success as physicians and scientists.

Intellectual progress in our school comes of our better understanding of the timely motions and uses of matter, so necessary to the formation and preservation of the healthy human body.

"The truth is here: there certain bodies are
Whose concourse, *motion*, combination, form,
Can fire create or change, yet are not like
To fire, or aught that can affect the touch,
Or to the sense appreciable be.
Why heap up argument to confirm my words?
These slight suggestions to sagacious mind
May well suffice. The rest you can divine.
As the hill-roving dog tracks out the prey
When, keen of scent, the sure trail once he's taken,
Thus influence you can draw, her lair invade,
And drag the truth reluctant to the light.
The sum of knowledge from *one atom* of truth
Can be in all its amplitude disclosed."

SECTION IX.

REPORT

OF THE

BUREAU OF OPHTHALMOLOGY, OTOLOGY, AND LARYNGOLOGY,

GEO. S. NORTON, M.D., ... New York.
W. H. WOODYATT, M.D., ... Chicago.
C. T. LIEBOLD, M.D., ... New York.
T. P. WILSON, M.D., ... Cincinnati.
HENRY C. HOUGHTON, M.D., ... New York.
WM. A. PHILLIPS, M.D., ... Cleveland.
F. H. FOSTER, M.D., ... Chicago.
C. H. VILAS, M.D., ... Chicago.
CLARENCE E. BEEBE, M.D., ... New York.
E. J. WHITNEY, M.D., ... Brooklyn, N. Y.
J. A. CAMPBELL, M.D., ... St. Louis.
CHARLES M. THOMAS, M.D., ... Philadelphia.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

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XXIX.

INDOLENT ULCERS OF THE CORNEA.

Synonyms: PHAGEDENIC CORNEAL ULCER; HYPOPYUM-KERATITIS; ULCUS SERPENS CORNEÆ OF SÆMISCH.

BY W. A. PHILLIPS, M.D., CLEVELAND, O.

THE cause and the therapeutic and surgical treatment of indolent ulcers of the cornea, have been studied by acute observers, with a care and persistence which have been rather more creditable in point of industrious research than satisfactory by way of unquestionable conclusions.

Like many other prominent lesions of the eye, the cause is to be sought in deeper and more obscure structures than the parts immediately involved; accordingly, the functions of the sympathetic and fifth nerves have, respectively, been vigorously interrogated to solve the problem containing the unknown quantity in the factors constituting the sum total of the symptoms peculiar to this disease. Though it is reasonably certain that nerve disturbance is at the foundation of phagedenic ulceration of the cornea, it is equally certain that any line of medication directed at the trouble as a neurosis, has not proved so effective as to establish by curative results the primary seat or cause of the destructive process. While our inability to arrest the disease by orthodox dose and potency probably rests more in not knowing exactly what to prescribe, than in the impossibility of the affection being really amenable to drug action, it is still very questionable practice, in view of results, for any practitioner, general or special, however much confidence he may have in his own sagacity, or in

the profound influence of medicine, to entirely ignore local and surgical measures in his attempt to arrest this most formidable variety of ulceration. Statistics show that in somewhat less than 40 per cent., the ulcer is caused by an injury, such as a chip of steel, or a bruise, while the majority, or about 60 per cent., are due to constitutional disturbances, the nature of which is not altogether apparent; and hence the difficulty of fixing upon any medicinal agent with any degree of accuracy.

The commencement of the disease is seen to be a circular grayish opacity, at or near the centre of the cornea, accompanied at first by only slight irritation. The impairment of vision follows, and is commonly the first symptom that alarms the patient. Very soon loss of substance occurs. The characteristic feature of the ulcer, however, is a swelling and grayish discoloration of its edge, in the form of a crescent. The destruction of tissue spreads slowly in one direction, growing deeper and broader, the base of the ulcer becoming covered with sloughed tissue, the edges being more or less densely infiltrated. In the majority of cases severe ciliary irritation occurs; as the process advances, pus may accumulate in the anterior chamber, as a result of suppurative iritis, and the danger of perforation, the formation of staphyloma and phthisis of the globe is imminent. But even if one or all of these unfavorable terminations be avoided, a dense opacity is liable to result, which will greatly impair the function of the eye. If, now, our patient reaches the stage of danger in spite of the "mild power that subdues," it is a duty we owe to the patient and to the profession that severer measures be adopted than the administration of potentized drugs, which measures are to be in the line of surgical interference.

The clinic conducted by Professor Sæmisch, of Bonn, has furnished a careful record of fifty cases of this kind of ulcer, together with a passing notice of thirty others whose history was incomplete, and the results obtained by means of the surgical procedure first recommended and practiced by Professor Sæmisch are somewhat remarkable, and so far as I can learn quite unequalled. Of the eighty cases operated upon only two were lost.*

* Arch. Ophthal. & Otol., vol. iii, No. 1, pp. 238.

To show how unsuccessful other means have proved, Dr. Bull, a prominent writer, in speaking of this form of ulcer, says: "As regards treatment, almost everything within our scope has been employed—antiphlogistics, irritant applications, paracentesis, iridectomy, atropia, and firm and long-continued pressure, but with rarely a favorable result."*

The case I have to report is a typical one, and one of peculiar interest in view of the extent of the ulceration, its duration, the amount of skilled treatment it had received at the hands of New York oculists, and its ultimately favorable termination.

The patient, a Rev. Mr. W., of Yonkers, N. Y., forty years of age, of good physique, and previously of uniformly good general health. I first saw him August 15th, 1877, rather more than a year after the trouble first made its appearance. At this time the ulcer covered fully two-thirds of the whole cornea of the right eye, extending from above downwards. Its upper border reached entirely across the cornea in a wavy, crescentic, horizontally-directed line, was abrupt, cleanly cut, somewhat clouded by infiltration, and apparently involving fully one-half the thickness of the corneal tissue. The pupil, which was partially dilated by atropine, was about three-fourths covered by the floor of the ulcer. The bottom of the ulcer at the upper portion was clear and free from detritus, while the lower and larger portion was covered with inflammatory products. No bloodvessels were visible in any part of its extent. The globe was congested, lachrymation profuse, and the ciliary neuralgia severe; while the pain and anxiety he had endured, together with the large amount of morphine administered, had told visibly upon his general health.

The second day after the first examination (August 17th), assisted by Dr. N. Schneider, who had recommended the case to my notice, I made what is known as Sæmisch's operation, which consists in making an incision through the floor of the ulcer, the extremities of the cut being in healthy tissue.

This wound was opened twice daily with a probe-pointed knife, for six days, at which time the incision had so nearly healed that it was allowed to close completely. But as no evidence of im-

* N. Y. Med. Jour., vol. xiv, No. 4, p. 379.

provement was seen as regards the ulcer itself, the operation was repeated the eighth day after the first one was made, and opened twice a day for nine days, when the general irritation had so much subsided, and the ulcer had assumed so healthy an appearance by a clearing up of its base and a disappearance of the zone of infiltration, that the opening of the wound was discontinued.

During this time chlorine water, diluted one-half, was instilled four times daily, and the eye bathed twice a day, twenty minutes at a time, with very hot water. Hepar sulph. 30th, was given internally. Subsequently, Kali bichrom. 6th, was given, and a weak solution of Nitrate of mercury was substituted for the chlorine water. The improvement was gradual, but continued without interruption, and the resulting opacity is comparatively slight, a faint line marking the union of the normal with the newly-formed tissue. Vision for distance is $\frac{10}{xv}$, while his near vision is such as to enable him to read ordinary print. The patient's own history of the case, and the treatment he received at celebrated hands, is so clearly and entertainingly told, that I am sure it will interest the Institute to hear it. From his letter, written April 9th, 1878, I extract as follows:

"I have been to see Dr. Agnew twice and Dr. Noyes twice since my return; not for advice or treatment, but to show them what you had done, and to assure myself that the healing process was going on all right. They were both much rejoiced at my recovery, and Dr. Noyes especially was delighted because your theory agreed with his, and because he had suggested the surgery you adopted before I left home. The trouble began in the summer of 1876. In July of that year several persons observed a speck on my eye, but it gave me no trouble until the 10th of September, when it first began to pain me. I spoke about this to my family physician, and received from him a prescription for some preparation of zinc to use as an eye-wash. I used it but little, however. I did nothing else for the eye until the 2d or 3d of October, when, the trouble increasing, I went to see a professor in the New York Homœopathic College. He directed simply the use of Pond's Extract diluted to one-half its strength. He also gave me some internal remedies. After remaining with

him for ten days, I went to Dr. Agnew, and put myself under his care. This was on the 12th of October. I remained under his treatment until the following June.

"During this period he tried almost everything under heaven. The ulcer, at the time I went to him, was very much less in extent than when I first showed it to you. It was semilunar, directly below the pupil, about half way between the lower edge of the pupil and the outer edge of the cornea. It was at that time developing quite rapidly in size and depth, until it reached the depth or nearly the depth of the corneal tissue. The danger of perforation was very great, but was averted by the operation of paracentesis twice performed, each time being followed by close bandaging for several days. Meanwhile, the doctor used in the eye atropine, powdered calomel, a weak solution of nitrate of silver, and a mixture consisting of turpentine and sweet oil. Early in December the hypodermic use of morphine was begun, and continued daily for wellnigh three months. In the first half of December, I also had my eyes both tightly bandaged for between one and two weeks. But Dr. Agnew thought that this produced nervous irritation and general depression of the system, and concluded that it was rather harmful than beneficial.

"About December 15th Dr. A. sought the advice of Dr. Knapp in regard to the case, but without any suggestions leading to any practical change of treatment. December 22d, by Dr. A.'s consent and approbation, I went to see Dr. Liebold. Dr. Agnew must certainly have considered the matter very serious to agree to even such a quasi-recognition of Dr. L., as was involved in sending me to him, with his cards and compliments, to get his advice.

"After two days I returned to Dr. Agnew, and by his direction continued the use of flaxseed poultices applied almost continuously for several days, as recommended by Dr. Liebold. Meanwhile the bloodvessels had begun to course across the floor of the ulcer, and to build up tissue lessening its depth, which never again became as great as in November. During all this time, and constantly thereafter also, I was taking all sorts of tonics and internal remedies. I was also making use of other general hygienic

treatment, Turkish and Russian baths. About the end of February I went to see Dr. Noyes. He made several careful examinations, and expressed the opinion that the ulcer was muro-paralytic in its origin, and recommended close bandaging and the trial of electricity. He also prescribed quinine in doses of about three grains. I tried the electricity administered faithfully by Dr. Rockwell, who makes it his specialty, but with no observable satisfactory results.

"Dr. A. resolved to perform a canthoplasty, and did so on the 16th of April. In connection with this operation, the wound healing very slowly, a small abscess under the lid of the eye occurred, causing much pain and nervous irritation, which was thought to be unfavorable. The use of morphine was again directed, and was not again abandoned by me until the beginning of September. After this I went to the seashore for a time, but it did me no good. At this time again the photophobia was very bad, the light at times causing me almost unendurable agony. Dr. Agnew then used some other irritants in the eye, and also tried nitrite of amyl, but without beneficial effect. He then recommended an iridectomy, but I objected, and insisted on taking counsel with some one else, and again went to Dr. Knapp. Dr. A. had also said that if the ulcer did not heal I had better have the eye taken out. Dr. K. advised strongly against the iridectomy, and said there was no justification in taking out the eye. He recommended close bandaging of both eyes for two months. This was almost as bad as the other, and I concluded to make an entirely new departure, so I went to a homœopathic physician. He administered only internal remedies. I only remained under his care for about two or three weeks, and then returned to Dr. Noyes. He then gave me the prescription of iodide of potash, which I was using at the time I first met you. He also tried yellow oxide of mercury, but it was too irritating. He also sanctioned the use of Bland's pills. I was taking 15 five-grain pills daily. He at that time recommended also the use of fomentations of very hot water three times a day for an hour each time. Dr. Noyes also proposed the operation which you performed, but as I was unwilling at that time to undergo any more surgery, nothing was done. I continued then to take

my pills and my morphine, and to bathe the eye three times daily with water scalding hot. I then went to Cleveland, and had been there three weeks when I had the good fortune to meet you, and to fall into your hands. All the time the ulcer continued to spread steadily until you checked its progress."

Exactly how much influence the Hepar sulph. and the Kali bichrom. may have had in the case, it is of course impossible to say; but I am inclined to give the credit almost, if not entirely, to the surgical interference, and am very much surprised to know that the operation named was not recommended long before by the celebrated oculists who had given their advice in the case. Whether it were the best thing to adopt or not, may still be a nut for Drs. Agnew and Knapp to crack, but the fact is that it proved curative; and hence we close the record of this very interesting case in the language of the Spanish proverb, that "Nothing succeeds like success."

XXX.

SÆMISCH'S OPERATION FOR ULCER OF THE CORNEA.

By Dwight B. Hunt, M.D., of New York.

On the 11th day of September, 1868, Dr. Sæmisch, of Bonn, performed his operation for ulcer of cornea, which at the present time has become so famous, and has been the means of producing many brilliant results.

The so-called serpiginous ulcer had destroyed many eyes under his treatment, and the proposition of Von Græfe, to puncture the base of the ulcer when perforation threatened, had not secured to him the results hoped for. On the day above referred to, a man, forty-two years of age, presented himself for treatment, suffering with a large central ulcer of the cornea, of traumatic origin; hypopion was present, and the cornea was threatened with perforation. Professor Sæmisch made the puncture advised by Von Græfe, but the pus being very thick and ropy, he had to enlarge the puncture to allow of its escape; he re-opened the wound three times in an interval of twelve hours, and found to his surprise that the hypopion did not reform nor the ulceration extend, as had been his experience with a simple puncture. Concluding that this was due to the enlargement of the puncture, he extended his cut throughout the entire base of the ulcer, kept the wound open until the healing of the ulcer had well advanced, and then allowed it to close. A central leucoma remained, but an iridectomy inward restored vision to one-third its normal state. After this his success was decided; he reports thirty-five cases, with the loss of only one eye. His success has been fol-

lowed with equal results by others, and it has been the means of saving many eyes.

In hospital practice one is apt to be consulted in neglected cases, and for many that have passed through the hands of several physicians, for which medical treatment has been of no avail, so that the cases usually present themselves in their worst forms. I have made the operation at the New York Ophthalmic Hospital many times and with the most gratifying results, arresting the process of ulceration almost immediately, and confining the resulting leucoma in its dimensions, preventing one of the numerous terminations that most certainly would otherwise have followed, viz., staphyloma, phthisis anterior, or phthisis bulbus following panophthalmitis. Of reported cases I find accounts only of those that were primary or uncomplicated; that is, of ulcers that have arisen from injuries to the cornea, that have developed spontaneously, or in connection with diseases of the lachrymal apparatus.

The object of my paper is to present to you the results of this incision upon ulceration secondary to or complicating other diseases, particularly to ulcers arising during an attack of trachoma. At the Five Points House of Industry, in New York City, during the past year, trachoma has prevailed with great severity. Many cases of ulceration developed during the epidemic, the great majority of which, however, healed nicely with internal medication, although a few ulcers became so extensive and deep, that but for this incision they most certainly would have destroyed vision. Before proceeding to an account of these cases, I will describe in as concise a manner as possible this operation. The patient must be in a recumbent posture while being operated upon, and, as a rule, it is better that an anæsthetic should be administered; the lids should be separated either with a speculum or a lid-elevator, or they can be held apart by the fingers of an assistant. I prefer the lid-elevators or the fingers of an assistant, from the fact that the speculum pressing on the eyeball, caused by a sudden effort of the patient to close the lids, has in my hands produced the rupture of the already thinned and ulcerated cornea. The bulbus is to be fixated with forceps. The knife I prefer for the division of the cornea is the small cataract

knife of Von Græfe; the incision must be made to correspond to the ulcer at its greatest breadth; the point of the knife is to be introduced about one line from the border of the ulcer through the healthy cornea and into the anterior chamber of the eye; the point of the knife should be then slowly pushed behind the ulcer, and the counter-puncture made in healthy tissue of the cornea beyond the border of the ulcer; there now lays before the blade of the knife and between the two punctures the diseased cornea in its entire dimensions; the knife is to be pushed still farther forward, and with a sawlike motion the intervening portion is to be cut through, with caution on the part of the operator. Any sudden escape of the aqueous humor is to be avoided. To accomplish this the cut must be made very slowly. All pressure on the bulbus at this time is to be guarded against After the operation the patient should be put to bed, and for the first few hours perfect quiet enjoined. As a rule, the application of a bandage to the operated eye is not only unnecessary, but hurtful; all required is a compress lightly applied. After an interval of an hour the wound is usually closed, and the anterior chamber again established, so that, if necessary at this time, atropine can be instilled. It is surprising to see how suddenly the process of ulceration is arrested and improvement begins after the incision is made. The hazy border of the cut, on the following day, does not appear to be bulged forward, or the ulcer to have extended. The base of the ulcer appears hazy; in other respects it is not changed. If hypopion has been present, and by the operation evacuated, it is not usual for it to reappear. It is essential that the opening should be maintained for several days, and for this purpose a probe-pointed Weber canalicula knife can be employed, and the adherent edges of the cut surface carefully separated. This should be repeated once or twice daily until the healing of the ulcer is quite advanced, when they should be allowed to close. Of the great worth and merit of this operation, and of its superiority to all others for the same object, there can be no doubt, for the reasons I have already given.

In presenting the following cases, I omit details of medical treatment, and wish simply to show the effect of the operation in each case.

CASE I.—Mary Ann Clifford, aged ten years, has suffered from chronic trachoma, with frequent acute exacerbations for two years, the present exacerbation having continued for three weeks. For fourteen days an extensive ulceration of the cornea has complicated the trachoma, resisting all remedial agents. On August 29th, 1877, the conditions were as follows: granular conjunctivitis, with quite profuse discharge; lids slightly swollen and œdematous; a large ulcer at centre of cornea of left eye (involving one-third of surface); at base of ulcer in substance of cornea an abscess is formed, the surrounding portion of cornea is infiltrated and hazy. I introduced the knife into healthy tissue of the cornea at the side of the ulcer, passed the point of the knife slowly behind the ulcer, and brought it out in healthy tissue of the cornea at the opposite side, laying the intervening portion, including the ulcer, open. An application of Calendula tincture (20 drops to 2 ounces of water) was then applied externally, and Calendula (first attenuation) given internally.

August 30th.—The cut surfaces have adhered slightly; separated with probe-pointed knife; infiltration of cornea lessened; no new formation of pus; discharge from trachoma still quite profuse.

August 31st.—Wound again opened; ulcer beginning to heal; no new formation of pus.

September 1st.—Wound again opened; ulcer healing.

September 2d.—Ulcer much better; discharge from trachoma still profuse; used Alumen ustum, pure, externally to lids, and gave same remedy in the third trituration internally.

September 29th.—The same treatment has been continued to date; the ulcer has completely healed, and only macula remains of about one-half size of previous ulcer; the acute exacerbation of trachoma is relieved, and the child discharged.

CASE II.—Emil Ennery, five years of age, came to hospital August 3d, 1877, with acute trachoma of both eyes. On the 13th of August, ten days after admission, a large ulcer formed at centre of cornea of right eye. He was treated with internal remedies until August 31st, the ulceration in the meantime varying, at one time better, at another worse, and for the previous two days the ulcer had been decidedly worse, involving one-half

of the cornea; the surrounding tissue hazy and œdematous; the discharge from trachoma still profuse. I made the Sæmisch incision, the child was put to bed, and Calendula externally and internally prescribed, as in the previous case.

September 1st.—Separated cut surfaces which had slightly adhered; ulcer has not increased in size, and surrounding cornea is less infiltrated.

September 2d.—Again separated cut surfaces; ulcer begins to improve.

September 3d.—Again separated cut surfaces; ulcer better; discharge from trachoma still profuse; apply the Alumen ustum externally, and gave the third trituration internally.

September 14th.—Ulcer is completely healed; acute trachoma well; discharged from hospital.

CASE III.—Henry Gibbs, seven years of age, came to hospital August 3d, 1877, with severe attack of acute trachoma. On 5th of September an ulcer developed on cornea of right eye, in connection with an increase of trachoma, intense swelling of lids, and chemosis of conjunctiva. The ulcer spread rapidly and attained great depth. On the 7th of September, two days after development, it covered one-half of the cornea; the remaining portion of the cornea was infiltrated. The conjunctiva still very much chemosed and the lids swollen. I made the Sæmisch incision and prescribed Calendula as in previous cases.

September 8th.—Cut surfaces separated; ulcer no larger.

September 9th.—Again separated cut surfaces; ulcer no larger; chemosis of conjunctiva and œdema of lids the same.

September 10th.—Ulcer slightly better; cornea clear; no infiltration.

September 29th.—Ulcer completely healed and trachoma cured, but substance of cornea so thinned at side of ulcer that staphyloma remains; made Sæmisch incision through base of staphyloma, in hopes of reducing it.

October 8th.—Cut surfaces have been daily separated to date; cornea appears normal, with exception of opacity; will allow cut to heal.

October 12th.—Incision healed; cornea normal, except opacity.

October 17*th.*—Staphyloma has slowly reformed; made iridectomy upward.

October 30*th.*—No staphyloma.

November 3*d.*—Left hospital; no staphyloma.

CASE IV.—Eugene Allen, eleven years, came to hospital August 10th, 1877, with acute trachoma of both eyes. On the 27th of August large ulcers formed on the cornea of each eye. On the 7th of September the ulcer of the cornea of the right eye was much better under treatment, while that of the left eye was rapidly increasing. Sæmisch incision was made; the progress of the ulcer was stopped at once, and in a short time it had healed, but, as in previous case, the loss of substance of cornea was so great that a staphyloma followed, which was relieved by an iridectomy.

CASE V.—Jane Clifford, aged six years, came to hospital November 15th, 1877, with acute trachoma and deep central ulcer of the cornea of the left eye.

November 17*th.*—Ulcer increasing, involves one third of cornea.

November 21*st.*—Ulcer still larger, and healthy portion of cornea hazy; profuse discharge from trachoma; made Sæmisch incision.

December 7*th.*—Cut surface was daily opened for a space of ten days, when it was allowed to close. At present time ulcer healed.

December 8*th.*—Fresh attack of acute trachoma; fresh ulcer forming at the centre, the site of the recent ulcer.

December 9*th.*—Lids so swollen that they form a perfect ectropion; ulcer extending rapidly and base bulging forward; cornea surrounding the ulcer hazy and œdematous; canthoplastic operation followed by Sæmisch incision; after operation applications of ice to lids.

December 10*th.*—Separated cut surfaces; ulcer no larger; lids about the same.

December 18*th.*—Cut surfaces have been daily separated to date; ulcer much smaller; no haziness of cornea surrounding ulcer, and lids still considerably swollen.

December 25*th.*—Ulcer healed.

CASE VI.—Anna M., aged five years, came to hospital March 29th, 1877, with acute trachoma.

April 8th.—Has one large ulcer at lower and two small ulcers at upper portion of cornea of left eye; discharge from trachoma profuse; lids swollen though not intensely; the ulcers are very deep, and the bases of all three are bulging forward; Sæmisch incision through lower and larger ulcer.

April 9th.—Border of cut surface appears to be sloughing; two smaller ulcers are better.

April 10th.—Improvement; no tendency to slough to-day; the ulcer no larger; two smaller ones still better.

May 5th.—The ulcer has slowly healed; the patient discharged.

CASE VII.—James M., aged eleven years, came to hospital April 16th, 1877, with acute trachoma of both eyes.

April 22d.—An ulcer of cornea of left eye has formed during the past five days and is rapidly extending both in depth and circumference; to-day pus is observed at base of ulcer in substance of cornea; the remaining portion of cornea hazy and infiltrated; the discharge from the disease of the lids still profuse; Sæmisch incision.

May 18th.—The cut surfaces were kept separated for eight days, when they were allowed to close, and at the present the ulcer is completely healed; the trachoma much improved.

XXXI.

CORNEAL ABRASION.

By James A. Campbell, M.D., St. Louis.

In presenting this subject, it is not my intention to go into a minute examination or technical details, but to offer briefly a few remarks upon a form of eye-trouble which is of every-day occurrence, and which, in one form, on account of its simplicity, is apt to be overlooked, and when more severe, to be wrongly treated. Fortunately, it generally takes care of itself, but it sometimes leads to most serious results.

Under this heading may be properly included all injuries of the corneal surface involving loss of any or all of its external layers. It is particularly to the former, where merely the epithelium layer, and possibly the anterior elastic layer also, is destroyed, that I desire to call attention. It is of very frequent occurrence, and may be produced by a babe's sharp finger-nail, by a straw, the brushing of a twig or bush, the switch of a horse's tail, or in many other ways.

The first symptoms are, slight pain, photophobia, lachrymation, and sensation as if something was in the eye. But these symptoms are common to most injuries of the eye, and hence they alone give us but little information as to the exact diagnosis, which is to be attained only by a careful examination. If merely the epithelium is involved, it being a tissue of nutritive repetition, the repair is generally rapid and complete, a few hours' rest being all that is necessary. But in certain depraved constitutional conditions, the simple scratch, instead of being immediately replaced by normal tissue, remains a source of constant irritation, which may increase until it involves the whole cor-

nea, and may be followed by total destruction. Sometimes the irritation continues in the eye for weeks, the cause being overlooked; indeed it often requires very careful inspection to discover and locate the exact point of abrasion. Oblique illumination, aided by a magnifying lens placed before the eye, is probably the readiest and the most certain way for examination.

As long as the cornea as a whole is not penetrated, the line of treatment remains essentially the same, whether only the epithelium layer, or in addition to it the deeper layers are involved, the difference being merely one of degree of severity. The eye should first be carefully examined to find out the exact nature of the trouble, and to see that no foreign body of any kind remains in it. Having determined this, we should next place the eye in a condition of absolute rest, as nearly as it is possible to do. This is best accomplished by bandaging the eye, so as to hold the lids still, to prevent them from rubbing over the abraded surfaces. All irritating or astringent collyria should be carefully avoided, as they are always injurious. If there is much ciliary irritation, a weak Belladonna fomentation (Tinct. belladonnæ, f℥ss–f℥ij to a pint of water), bathed over the closed lids, will be soothing. Atropia sulph., gr. j to gr. ij, to f℥j water, will at times be called for if the ciliary irritation is more severe; yet occasionally I find that it has an irritating effect in these corneal abrasion cases. In such an event a Belladonna unguent (Extract belladonnæ, f℥iij; Glycerin, ℥j; Adipis, f℥ss) rubbed over the brow, will be very efficacious. As a rule, it will be best to rely upon the bandage, thus insuring quiet, and the external use of the Belladonna lotions in case of ciliary pains. In the very beginning, Aconite or Arnica will be called for internally, and in the simpler forms of abrasion will generally be all that are necessary. If the injury involves the deeper layers, the process of repair will be more retarded, and will call for additional remedies in the later stages, but the external indications remain the same; although if the wound is very severe it will be advisable to bandage both eyes for a time, for it is only by this means that we shall be able to insure perfect rest to the injured eye.

XXXII.

SUPPURATIVE KERATITIS.

By C. H. Vilas, M.D., Chicago.

Any disease of the cornea rendering it liable to opacity or disintegration is highly dangerous to vision. Among all diseases of this structure, none is more threatening in these directions than that which forms the subject of this paper.

Suppurative keratitis knows no limit in age; it attacks the young and the old. It is the sequence of other local diseases through bad management or contiguity of diseased tissue, and often follows with terrible waste the best-executed and well-promising operation.

Such being the case then, it will be becoming to carefully consider the causes and their aversion, the treatment and its successful execution.

Suppurative keratitis may be defined to be that form of inflammation of the cornea which tends to the formation of abscess or ulcer. Its special pathology is that the inflammatory infiltration is changed into pus, which may be seen as a yellow deposit in the corneal tissue. The whole cornea may become involved as a yellow broken-down mass, or the suppuration may be limited to a greater or less proportion of this tissue. At times the attending vascularity and pain may be very great; the impending danger cries full warning. Again it insidiously steals on, and irretrievable ruin, irreparable destruction of the cornea ensues, replaced only by opaque cicatricial tissue, entailing, as a final result, hopeless blindness.

Diseases of the conjunctiva are often precursors to this disease. Depending on its adjacent peripheral surroundings for

nourishment, any dangerous inflammation of the conjunctiva, often, through accompanying difficulties, deprives the cornea of its nourishment, and suppurative necrosis ensues.

The results, if not the treatment, may be materially changed by two conditions, whether the suppuration begin by an abscess or an ulcer. An abscess of the cornea is an inclosure of pus in corneal tissue, and begins by a grayish speck, which is often exceedingly tender to the touch. As it grows larger it assumes the yellow pus color distinctive of the suppurative form. Two situations now present themselves, the abscess may burst and discharge internally, in which case we have a hypopion, or pus within the anterior chamber, or the walls of the abscess may remain unbroken, and fatty or chalky degeneration of the pus ensue, a dense opacity resulting. The other result may be that the abscess will burst externally, forming an ulcer. The final result will largely depend on the issue of these alternatives, as determining not so much the extent as the kind of deformity remaining. Leucoma adherens is the almost inevitable result of the former, while the range of the latter is from a faint nebula to the largest unsightly anterior staphyloma.

Hypopion has been mentioned. There is a condition faintly similar to, often erroneously confounded with it, which has been happily named onyx or lunella, from a seeming resemblance to the white crescent near the matrix of the finger-nail. It consists of a line of pus which gravity has settled to the lower border of the abscess. Glanced at in profile, an error can seldom be made by a practiced eye. The fact that they may coexist, however, should not be forgotten.

The judicious treatment of this disease, it need be barely mentioned, is highly essential to a safe recovery. There can be no doubt as to the general character of its local treatment, but thereon does not hinge the whole basis of success. That treatment which is applicable to one patient may not be wholly applicable to another, and the judgment and tact of the surgeon will be heavily tried, as in the severer forms of conjunctivitis, to draw his line of treatment accurately. Rest and protection are essential. Atropia in varying strengths will fulfil the former; the latter is likewise easily met. But the question of constitutional

treatment deduced from how far the disease is dependent on depraved living, insufficient nutrition, etc., what with judgment may be supplied, what with discretion withheld, will often be the leading and main questions. Clinical experience and the ripe gleanings of a sound and educated judgment will alone furnish the answer. The mere specialist will often fail where the well-balanced medical practitioner will succeed; combined they are alone invincible.

The topical application of heat and cold is a question largely of experiment. Twelve years ago, when on the threshold of my profession, the directions of Sir Henry Holland, whom I had the honor of meeting at that time, sank deep in my mind. Simple as they are, they have never been excelled, and have become undisputed among all the bitter contenders for the wholly opposite theories, viz.: Use that which is found most agreeable to the patient. To us, as homœopaths, such advice may seem almost trite or puerile, but the good these simple words may have worked among a class blindly following in the footsteps of illustrious success, can hardly be overestimated. Clinical experience shows heat to be generally the best borne, but it is a good rule to begin with the temperature of the eye, and then use warmer or cooler, as is most grateful to the patient.

As regards internal remedies, I may be pardoned a personal opinion, which is given with all modesty, and deference to that of others. It has never chanced to me to see an eye lost by this form of disease where, the patient being in fair health, Hepar sulphuris has been used with constancy, in combination with such local measures as were indicated. I have such faith in this remedy, that when called to a case where the cornea has not burst, or is in no immediate danger of it, I say with almost certainty that it can be prevented, and I rely on this remedy almost exclusively. I have not lost a case in private practice, and from the Hahnemann Hospital of Chicago, since the charge of the Eye and Ear Department was delegated to me, a similar report can be made. For this reason, and because I have learned much more each year by studying our remedies, than by chasing after new and strange gods, I have not used, except in rare instances, the various local

preparations which fashion has from time to time dictated, and which are quite the rage just now.

The special indications for Hepar sulphur as usually given are the deep sloughing forms of abscesses and ulcers, with hypopion, for the absorption of which there is no better remedy. There is often also great redness of the cornea and conjunctiva, with intense photophobia.

But we must not rely on this remedy alone in a routine way. We would think of Aurum, when the cervical glands were inflamed and enlarged, and a hereditary syphilitic diathesis were present or suspected; of Argentum nitricum, when there was a profuse and thick discharge from the lids; of Arsenicum, when the discharge was thin and watery, acrid and excoriating, with burning and sticking pain, worse at night, and accompanied with great restlessness and prostration; of Mercurius, preferably the biniodide, when in a syphilitic or strumous subject, with thin and acrid discharges; of Sulphur, in the more chronic forms, especially with pus in the anterior chamber; of Graphites, when occurring in children who are scrofulous, with eczematous eruptions, particularly behind the ears and on the head; of Silicea, when the abscess or ulcer has a great tendency to perforate, or is of a sloughing form; and of others, with especial reference to constitutional and diathetic conditions, and as intercurrents. Particular care should also be bestowed on the general indications for the remedies aside from the relation they may bear to the local troubles.

But we have means at our command to prevent with great certainty the bursting of the cornea. The special pathology of this accident is quite clear. The cornea is weakened, and the pressure from behind causes the damage. The indications then are plain: remove the pressure and sustain the weakened cornea. These points we may accomplish by two operations, paracentesis or iridectomy, combining the pressure bandage with each. The former will, if early performed, generally be all that is necessary. There are grave objections to an iridectomy, and it should always be avoided if possible. There is never a perfect eye after the operation, and the resulting coloboma, aside from its disfigurement, is a source of more or less annoyance and irritation, from

its admission of rays of light which form circles of diffusion in the retina; while of a well-performed paracentesis there will never remain any permanent injury, which alone, if the operation be equally effectual, is a sufficient reason to render it the choice.

Another operation, known as Sæmisch's, should be described, however, as a useful and somewhat popular operation for this trouble. It consists in entering the anterior chamber with a Græfe's cataract knife through healthy corneal tissue on one side of the ulcer, and then bringing the knife out on the opposite side of the ulcer through healthy corneal tissue as well, and then with a sawing motion cutting through the ulcer. It is a successful measure in some kinds of ulcers, but rather formidable for a hand not well versed in ophthalmic surgery.

As has been remarked, this disease may follow after any operation where the cornea has been divided. The special pathology is again quite clear. By the solution of continuity, the cornea can no longer derive sustenance from the peripheral portion from which it is severed, and dies from inanition. The danger, other things being equal, will of course be in proportion to the amount severed. I am unaware of any definite method of determining farther the danger beforehand. Clinical experience shows our seemingly reliable guides to be valueless often, and leaves us to infer that a cornea never suppurates except from an almost unconquerable predisposition. Attention to the general health and laws of nutrition doubtless aid us, but sometimes the apparently most healthy cornea rushes on to suppuration, while the old, feeble and flabby stands the shock unharmed.

Much has been attempted in the way of limiting the suppuration, but from the nature of the trouble in large incisions, great difficulties are to be met with. The process of repair must be carried on through a smaller base than nature intended, and in a tissue so poorly prepared for emergencies as the cornea, it is done with difficulty at least. Surgeons differ greatly as to what and how much should be done in the way of treatment. Some leave the disease almost alone, contenting themselves with pressure and hot fomentations; others regard these as dangerous; others still attack it boldly with the pharmacopœia and surgical arma-

mentarium. The disease, however, requires such an extended view and comprehensive knowledge of the principles of ophthalmic medicine and surgery for its treatment, as rightly to be the subject of a tome rather than an unpretentious paper, and must be passed herein without further consideration.

In conclusion, having already exceeded the time allowed by the rules, I must content myself with simply mentioning suppurative keratitis due to nervous lesions, and leave the special treatment, when a result of purulent conjunctivitis, or the diseases of the conjunctiva, to my colleague who shall write on that subject.

XXXIII.

TREATMENT OF SUPPURATIVE KERATITIS.

By Alfred Wanstall, M.D., Baltimore, Md.

It is not my design to enter into the discussion of the pathology, or give a detailed description of the course of this class of corneal affections; as I could do no more than compile from the numerous textbooks on ophthalmic surgery. I shall state as briefly as possible the treatment and operative indications for this dangerous class of diseases, together with that of sloughing of the cornea as a complication of the various ophthalmias. Nor will I take the time to give the characteristic indications for the homœopathic remedies, as they are so well illustrated in Allen and Norton's *Ophthalmic Therapeutics*, and I have nothing new to add.

No class of eye diseases requires so much careful, intelligent and energetic treatment as suppurative inflammation of the cornea, as when left to themselves or improperly treated, they almost always terminate in irremediable loss of sight or entire destruction of the eye.

By suppurative keratitis is generally understood abscess, and suppurating ulcers of the cornea, inflammatory and non-inflammatory in character. Besides abscess and suppurating ulcers, we shall consider sloughing of the cornea as a complication of the various forms of ophthalmia, conjunctivitis purulenta, neonatorum, gonorrhoica, diphtheritica and trachomatosa; also sloughing of the cornea after cataract extraction. Abscess of the cornea is one of the more frequent of this class of diseases, and occurs in debilitated and scrofulous subjects of all ages. It makes its appearance as a primary disease; frequently complicates other corneal and

conjunctival affections, as pustular and phlyctenular keratitis and conjunctivitis, and not unfrequently follows debilitating constitutional diseases, as typhoid fever, scarlet fever, etc.

The first and most important elements of the treatment are good air and nourishing diet, especially avoiding fatty and greasy articles of food. As the nature of the disease indicates, it is seldom accompanied by much inflammatory action, and in the earlier stages there is slight conjunctival secretion; the iris as a rule remains free, and will readily dilate with the instillation of Atropine, which should never be neglected if the abscess is centrally located. Hypopion is a frequent but not dangerous complication.

I believe there is no class of corneal affections which illustrates in so marked a degree the value of the compress bandage, which should be carefully applied, and changed from two to three times a day for the purpose of cleansing the eye and instilling Atropine. With ordinary care the bandage can be applied and retained on very young children, and should not be neglected on account of the age and restlessness of the patient.

The remedies that will be found of the most value are the preparations of calcarea, Calc. carb., hypophos., and iodata, Hepar sul., Kali bich., Merc. sol., protoiodide, Pulsatilla, Rhus tox., Silicea and Sulphur. Local treatment in the form of applications is not indicated, and may do injury by causing irritation. Taken in time, in a large majority of cases, the abscess will be absorbed by this treatment.

An operative measure which is much used, and one I have always seen followed by the very best results, is the so-called Sæmisch's incision, which has become so celebrated in connection with the ulcus serpens. The operation is made with a Græfe's cataract knife, and consists in entering the knife into the anterior chamber through the healthy corneal tissue on one side of the abscess, carrying the knife behind the centre of the abscess, and making the contrapuncture in the healthy cornea on the opposite side, then cutting out slowly and carefully; the aqueous is evacuated with the contents of the abscess.

The operation should always be conducted under complete narcosis, the lids being held apart by the fingers of an assistant. The speculum should not be used, for this reason: the pressure

exerted by it is apt to cause the too forcible expulsion of the aqueous and prolapse of the iris. If necessary, the wound can be opened and the contents of the anterior chamber evacuated from day to day, by using Bowman's canaliculus knife; though I am of the opinion that any secondary opening of the wound only aggravates the trouble by bruising the tissues, having seen the simple incision followed by the best results. It is self-evident that the pupil must be dilated and kept so by the use of Atropine. Great care should be used in making this incision with abscesses situated on the corneal border, or prolapse of the iris will occur, and then it should be drawn out and cut off with the scissors; the iris usually lays itself against the cornea, and recedes as soon as the chamber is established, which occurs in a few hours.

In the place of Sæmisch's incision, with peripheral abscesses which threaten to perforate, a large iridectomy can be made. The peripheral location of the abscess or ulcer forms a valuable indication for the instillation of Eserin.

It is always preferable to operate, rather than allow the abscess or ulcer to perforate spontaneously, which almost always results in irremediable prolapse of the iris, and even of the lens. After the operation the eye should be kept covered with a light compress, wet with a decoction of Calendula. The operation can be made in the office, and the patient be allowed to go home.

The treatment of suppurating ulcers of the cornea does not differ materially from that already laid down for abscess, with the exceptions that the compress bandage cannot be as universally used, local treatment is more frequently indicated, and the list of remedies may be increased by the addition of Acon., Apis, Arg. nit., Arnica, Arsen., Aurum, Cham., China, Cinnabaris, Graph., Merc. corros. and nitrosus, Nat. mur., Nux vom., and Phytolacca.

Contraindications for the compress bandage are, violent inflammatory accompaniments, iritis, and very profuse secretion. The discharge is frequently very abundant and corroding, which calls for the greatest cleanliness; for which purpose chlorine water exceeds in value all other applications. The irritation caused by its use is not severe, and its action is very transitory; besides, it is a perfect disinfectant, and appears to possess the property of

completely destroying the septic poison of purulent ophthalmias. The strength of the solution should vary according to the severity of the case: one part of Aqua chlori to three of water, half and half, or pure. Great care should be observed in obtaining a fresh preparation, as it loses its strength very rapidly by evaporation and is acted on by the light; therefore it must be kept in a glass-stoppered dark bottle. (Shortly after removing to Baltimore I had urgent occasion for its use, but was unable to obtain a good preparation anywhere in the city.)

It should be applied frequently (every hour or half hour) with a camel's-hair brush to the ulcerating corneal surface, especially with the non-inflammatory suppurative keratitis, and all traces of the discharge carefully removed from the conjunctival sac. Care should be used in applying the pure chlorine in the inflammatory suppurative keratitis, as it may excite too much reaction, though it should always be used either pure or in solution for removing the discharge; in both varieties the eye can be kept covered with a light soft compress wet with chlorine water, and covered by oil-silk or soft rubber-cloth. In the inflammatory suppurative keratitis, dry cold in the form of the ice-bag is frequently of great value, and in the non-inflammatory, hot slippery elm poultices may be used; the poultices should not remain on the eye after they have become cold, and when removed for the night, or while reheating, should be replaced by a large cotton pad.

Atropine should be used as directed under abscess. The 1st trituration of Nitrate of mercury in cane sugar makes a valuable local application, and is much used by Dr. Liebold, of New York, in the following formula: ℞. Merc. nit.[1] grs. xv; Aqua c. ʒiij. S. External use by means of a camel's-hair brush to the ulcerating cornea. If dilatation of the pupil is desired, gtts. xx–xxx of a four-grain solution of Atropine is added to the above.

The operative measures described under abscess of the cornea hold good in every particular here. Diet should be regulated according to the conditions governing each case, *i. e.*, whether there is a condition of excitation or depression present.

During the past year, solutions of the Sulphate of eserin have been very extensively used by the old school for deep sloughing

ulcers and abscess-like ulcers of the cornea. A one per cent. or two per cent. solution is dropped into the eye every hour or half hour. It possesses the property of contracting the pupil, and decreases the tension in the anterior chamber, whilst that in the posterior chamber is increased; it prevents prolapse of the iris, and hastens the absorption of hypopion. It is also highly recommended after Sæmisch's incision.

The great value of Eserin, when Atropine is contraindicated by the peripheral location of the abscess or ulcer, is very apparent.

L. V. Wecker has attributed to Eserin an antiseptic action, which has not been conceded by other authorities, nor proved by experiment.

We shall now consider sloughing of the cornea occurring as a complication of the contagious ophthalmias. The treatment of this complication with conjunctivitis purulenta, neonatorum, and gonorrhoica, does not differ materially. The great amount and ichorous nature of the secretions positively contraindicate the use of the compress bandage. Unremitting and scrupulous attention to cleanliness is of the first importance, and local applications to the lids are indicated. I do not mean to infer that these diseases cannot be treated by internal treatment and cleanliness alone; my remarks refer to these affections when complicated with sloughing of the cornea, which, once commenced, will frequently destroy the entire organ in twenty-four or forty-eight hours. Here, as in the other forms of suppurative keratitis, Chlorine water is of the greatest value, and should be used pure, applied to the everted lids only. Experience has convinced me that the irritation of even a soft camel's-hair brush, when applied to the cornea only, hastens the degeneration.

If the Chlorine water does not accomplish the desired result with the purulent ophthalmias, resource must be had to the local application of a solution of Nitrate of silver, ten grains to the ounce, or stronger. Nitrate of silver should never be used locally with conjunctivitis trachomatosa, as it always aggravates the inflammatory action and hastens the degeneration.

I have had no personal experience with conjunctivitis diphtheritica, but am inclined to think that the rule in regard to

Argentum nit. in trachoma will hold good in this disease; though Dr. Charles M. Allin, of New York, has treated a case of diphtheritica conjunctivitis, with sloughing of the cornea, by the local use of solid Nitrate of silver and Canthoplasty. According to the same authority, the late Dr. Althof treated successfully five cases by the same means.

Canthoplasty and scarification of the lids should not be forgotten with conjunctivitis trachomatosa, and the purulent ophthalmias. The local use of the ice-bag is of the utmost importance in these cases, especially in the diphtheritic and trachomatous conjunctivitis.

The remedies for internal administration are to be selected from the preceding lists.

I shall conclude with a few remarks on sloughing of the cornea following cataract extraction. Without dwelling upon the probable causes of this complication, I shall simply call attention to a method of treatment I have lately seen followed by good results in several cases.

It was first recommended by Dr. Liebold, and consists in the local application of a hot decoction of Calendula. It is to be brought into use upon the first appearance of sloughing, which will be indicated by the character and quantity of the discharge in twenty-four or forty-eight hours after the operation, when the lids should be opened and the condition of the cornea and wound examined.

The decoction must be strong, and freshly prepared at least every six hours; it is to be applied hot, with a soft camel-hair brush, to the borders of the wound every hour or half hour, occasionally intermitting for one or two hours.

Great care must be used in applying the brush to the cornea, as the least over-pressure or approach to hard brushing will sensibly increase the sloughing. All the discharge should be carefully removed from the conjunctival sac, and the eye kept covered with a soft compress wet with the hot decoction of Calendula, and this in turn covered with soft rubber-cloth.

The instillation of a solution of the Sulphate of eserin is said to have great influence over sloughing of the cornea after cataract extraction; numerous instances of its efficacy are reported.

Upon this subject L. V. Wecker says: "Sloughing of the wound after cataract extraction is my third indication for the use of Eserin. As soon as the conjunctival secretion is increased, and the borders of the wound and anterior chamber become turbid, I treat the eye in the following manner:

"The wound is opened in its entire expansion by means of a stilet, and the aqueous humor allowed to flow out. If the irritation is not too great, a one per cent. solution of Eserin is dropped into the eye every hour or half hour.

"For cleansing the eye, a hot solution of Carbolic acid is used frequently.

"This treatment of the wound was first brought into use by Alfred Græfe, and shows that he as well as myself regards the diseased appearances entering the wound after cataract extraction as the result of infection, and I believe it is entirely logical to treat it as I would an infectious ulcer (ulcus serpens)."

XXXIV.

PANNUS RESULTING FROM GRANULAR LIDS.

By George S. Norton, M.D., New York.

After brief mention of a few of the most important characteristics of this disease, we shall endeavor, in this article, to direct special attention to its proper treatment as gained from clinical observation.

Under this term, pannus, we shall include keratitis pannosa, and describe it as a *vascular superficial cloudiness of the cornea.* Pannus, *per se,* is the *result* of an inflammatory process in the cornea, by which a layer of neoplastic cells is formed beneath the epithelial layer. When this inflammation takes on an active character, it may then properly be designated as keratitis pannosa.

The symptom by which we distinguish this condition is, as already given, a vascular superficial cloudiness of the cornea, which may be confined to one portion of the cornea or extend over its whole expanse. The infiltration and bloodvessels usually begin at the periphery and above, as one would naturally suppose from the cause. The surface or epithelial layer will be intact unless the inflammatory process is active, when it may be roughened and covered with points of ulceration; if this is the case, photophobia, lachrymation and pain may be expected.

Among the causes we would note granular lids as by far the most frequent, though trichiasis, injuries, scrofulous inflammation of the cornea, etc., may develop pannus.

It is necessary to differentiate between pannus and superficial

inflammation of the cornea, as in the latter bloodvessels may be seen on the cornea as well as in the former. This can usually easily be done by attention to the history of the case, its *duration, cause,* and course, as well as in the fact that in superficial keratitis the vessels will be less in number, running to some well-defined point of ulceration, be more superficial and accompanied by less haziness of the cornea, but more photophobia than is the case in true pannus, though we must bear in mind that the latter may develop from the former.

The course of this disease, as all oculists know, is very tedious, though the prognosis, under proper treatment, cannot be considered unfavorable.

TREATMENT.

Prevention.—Active measures should be adopted, before the cornea has become involved, to cure granular lids or any other ocular trouble which tends to cause pannus. Even afterward our principal treatment will be directed to the cause. As this disease is most commonly found among the lower classes, who live in ill-ventilated apartments, and who are exposed much of the time to wind, dust, and all manner of filth, we should endeavor to enforce cleanliness and proper hygienic measures in as strong terms as possible. The *contagiousness* of the discharges must also be explained to the patient, in order that separate towels, etc., may be used, and thus an endeavor made to prevent its extension.

Local Applications.—We now touch upon a point that is open to discussión, viz., the advisability of local applications. As a general rule we are opposed to the use of drugs, especially strong applications, directly to the eye in all ocular affections, for we believe that we can cure more easily and better with internal medication alone, providing we follow the homœopathic law in the selection of our remedy. But in pannus arising from granular lids, we must confess that we have often been compelled to resort to topical remedies in order to effect a cure, owing, no doubt, to the incompleteness of the provings in the Materia Medica, and our ignorance of those provings. This conclusion, we must state, has not been arrived at hastily or carelessly, as for from two to three years, in the treatment of a large number

of cases in hospital and private practice, we relied entirely upon the homœopathic remedy, selected to the best of our ability, and the results were not as good as one ought to expect. We hope, however, that further investigation may yet show us how we can cure this disease as quickly without as with local measures.

Ice.—This we consider one of the most important aids we possess in the treatment of acute cases of pannus (keratitis pannosa), and in *acute aggravations of chronic cases;* even when the inflammatory process is at a stand-still or subacute in variety, the use of ice is often followed by beneficial results. Its greatest advantage is, however, obtained when the inflammation is markedly active, for speedy relief is usually given from all pain and heat in the eye, while, at the same time, a diminution of the inflammation is observed. The ice should be broken in small pieces, and put in a rubber bag made for this purpose, or it may be wrapped in a piece of linen or muslin, and then placed on the eye. It should be kept on as much of the time as possible without producing pain or uncomfortable sensation of coldness. We have also employed it by keeping cloths on the ice, and rapidly changing them to the eye.

Atropine is of service if there is any tendency towards iritis or hyperæmia of the iris, if the ciliary neuralgia is very severe, or if there is central ulceration of the cornea which tends towards perforation. A solution of four grains to the ounce should be instilled as often as necessary to produce the desired result.

Tannic acid.—From this remedy and the one that follows, we have obtained our most satisfactory results in the treatment of trachoma and pannus, so far as local applications are concerned. It is especially useful in old chronic cases in which the cornea is densely pannoused. After trial of various solutions, both strong and weak, we conclude that our best results have been gained from the following: Tannic acid, grs. xv; Glycerin, ℥j. The lids should be everted and brushed over once a day with this preparation.

Alumen exsiccatum.—This remedy we have employed in two ways for granular lids and pannus. Its sphere of action seems to be about the same as that given for Tannic acid. The methods of application are as follows: The first and most common man-

ner of administration is in a solution of Glycerin (Alumen exsic., ʒj; Glycerin, ℥ij), which is to be applied to everted lids once a day. The second mode of application is by dusting the crude powder on the inner surface of the lids, allowing it to remain about a minute, more or less, and then washing it off with pure water.

Cuprum aluminatum.—In obstinate cases, in which the above applications fail, we sometimes resort to this preparation of copper with benefit, and prefer it to the sulphate so commonly used by the old school. The crystals are employed, with which the palpebral conjunctiva should be gently touched every day or two.

Argentum nitricum.—Weak solutions of the crystals, from two to four grains to the ounce of water, have sometimes been used with advantage in these troubles.

Internal Medication.—We do not wish it to be understood that we advocate the use of local applications to the exclusion of internal remedies, for this is not the case; but, upon the other hand, we consider constitutional remedies, selected according to the law of *similia*, as of the very first importance in effecting a permanent cure. It is necessary to eradicate the cause of the disease, which, unless mechanical, should be done by drugs given internally. In the selection of the appropriate remedy all the symptoms of the patient must be considered, and, therefore, the whole range of drugs in our Materia Medica may be called into action. In this short article we can only give the prominent characteristics of a few which have been of special service in our practice. Of these we shall make three divisions: first, those of prime importance; second, those not unfrequently employed with benefit; and, third, those which have occasionally been followed by favorable results.

Aconite.—This deserves being placed first in the list of remedies for the cure of pannus, as we have found no remedy more commonly indicated in this affection. It is not only adapted to acute cases and acute aggravations, but also to chronic conditions, in all of which its results are often almost marvellous. Its special sphere is, however, in acute aggravations, in which there is great redness of conjunctiva and pannoused cornea, with much dryness, *heat and burning* in the eye. Lachrymation may be

present instead of dryness. Photophobia is usually marked. Pain in and around the eye may be experienced, though heat and burning usually cover the unpleasant sensations. Combine the use of ice externally with Aconite internally, and the favorable results obtained are often surprising, even without the aid of local medicinal means.

Aurum.—Used either as the metal or the muriate (the latter especially in the lower potencies), it has quite often proved of great service in trachoma and pannus. We have more commonly found the pannus of high degree, and complicated with corneal ulceration, when this remedy has been required, though its characteristic eye indications are not known, and we must rely on the general condition.

Kali bichrom.—More often, according to our views, needed in chronic cases of pannus, in which the redness is moderate, and the photophobia nearly or entirely absent, as well as the lachrymation and pain.

Mercurius prot.—Mercury, especially this preparation, should rank with Aconite in frequency of indication in trachoma and pannus. As a remedy for *superficial ulceration of a pannoused cornea,* it has proved more servicable than any other in the majority of cases. The symptoms are usually of an acute character, as great redness, photophobia, lachrymation, and pain of various kinds, generally worse at night, though one or more of these may be absent. The yellow coating at the base of the tongue, and other concomitant symptoms, are also to be found.

The other preparations of Mercury are required according to special indications, as Merc. præcip. rub., in old chronic cases in which the pannus is of high degree, and Merc. corr. when the symptoms are very severe, photophobia great, lachrymation and discharges profuse and excoriating, etc.

Rhus tox.—Decided advantage may be gained from this drug in granular lids and pannus, if the *lachrymation is very profuse,* and any aggravation is observed from damp weather.

Sulphur.—Trachoma and pannus, either acute or chronic, especially the latter. The redness, photophobia and lachrymation are variable. The *pains are usually sharp and sticking.* The general indications will decide our choice of this remedy.

Under our second division of remedies we would give the following:

Alumina.—Of service in chronic cases of granular lids and pannus, in which there is marked dryness of the lids and eye, with loss of power in the upper lid.

Argentum nitr.—May be employed externally and internally at the same time, especially if the discharge is moderately profuse.

Calcarea carb.—Pannus and trachoma resulting from working in water, or aggravated by damp weather.

Chininum mur.—Marked improvement has been observed from the internal use of this form of quinine in various phases of the disease, though particularly if there is much pain and decided periodicity in the symptoms.

Natrum mur.—Adapted to chronic cases that have already been treated by caustics, especially Nitrate of silver.

Euphrasia, Hepar, Nux v. and Puls., may also be noted here in this division as useful under certain conditions, and when called for by general indications.

In our third class of remedies the following drugs are given, without reference to their special indications, which are so meagre and unreliable that we have thought best not to detain the Institute by giving them: Alumen exs., Ars., Bell., Caust., Chintan, Cinnab., Con., Cupr. al. and sulph., Nat. phos., Petrol., Sang., Sep., Tartar em., Thuja and Zinc.

XXXV.

STRABISMUS

By T. P. Wilson, M.D., Cincinnati.

No two men can have a like experience in medical practice. After a few years of hard service the practitioner, if intelligent and studious, becomes of age, and is able to act upon his own responsibility; he is no longer a servile imitator of others, but is a law unto himself. Whatever may be said of the exactitude of medical practice, it cannot be said of surgery that it will never be reduced to an invariable system. Its various rules cannot be used as so many logarithms to work out the problems of practice.

I would not trust as competent the man who religiously followed the teachings of "the books." Beginners are obliged to do this, of course, but of course they are not counted competent. At least they cannot be said to be entirely competent until they have had a large experience, and when that time comes they break with their teachers and set up business on their own capital, which capital is a combination of intelligence, individuality and manly daring.

General surgery is so old it may perhaps be said to have some settled maxims from which it would be unsafe to depart. But in ophthalmic surgery we have most operations held less tentatively. We do not know if the best way is yet found out.

The operation for the correction of strabismus is yet in this category. Some considerable interest pertains to this matter, both on account of the great frequency with which it is called for and the frequent attempts made by all sort of surgeons to perform it. Add to this the altogether too frequent failures following the attempt, and you can see a valid reason for giving it some special attention.

A careful study of the subject running through all the modern authors is productive of confusion. Before Albrecht von Græfe's time it was involved in ignorance and chaos, and success in operating was the exception; and we may say that these as well as the almost universal failures were simply blunders.

So recently have we come to understand the principles that should govern us in the matter, it is not strange that our best writers upon the subject are yet at variance among themseves.

I shall speak at this time of concomitant converging strabismus only. In this case, with the eyes at rest, we find the anterior pale of the visual axis of one eye lying across the axis of its fellow eye. Either eye can be made to assume a position with its axis directed forward, but only in connection with an associated movement of the other eye, by which this latter eye moves inward precisely as the other moves outward. Hence such a strabismus is termed concomitant.

We have now in view such a case brought to us for relief by an operation. The necessity for this is threefold.

1. There is the deformity consequent upon the malposition of the deviating eye. To relieve this is to make the countenance of the patient to glow with new beauty, and to restore to it the expression of intelligence belonging to it as one of the most important possessions of a human being. The value of this one point cannot be overestimated.

One of our most renowned politicians has obtained the sobriquet of "Old Gimlet Eyes." But this does not hurt him; he is used to it and things much worse. But with a child it is far otherwise. To call a delicate, sensitive little girl "a cock-eye," as playmates in their sudden bursts of anger are apt to do, is to open a bleeding wound in the heart which may never be healed.

Many a child, through the unfortunate ignorance of its parents and the almost criminal ignorance of the family physician, is allowed to be hopelessly marred in mind and soul, as well as deformed in body, by an uncorrected strabismus. Such a deformity, continued with our present ability to correct it, becomes a crime.

2. Loss of vision. If one eye inclines to do all the converging, that eye must pay the penalty in the loss of sight. There will be a steady deterioration of vision, and the longer the convergence

continues the less likelihood will there be of restoration. But in nearly every instance coming under my observation, considerable improvement, and in some instances complete recovery of sight has followed the correction of the squint.

3. Disagreeable sensations. Many patients, though not all, complain of constant unpleasant feelings in the eyes, more especially the one which deviates. There seems to be a drawing sensation and an indefinable feeling of confusion. It is much like a pain one has which he has ceased to notice, and, as it were, becomes conscious of only after being relieved of it.

We pass now to the consideration of the best mode of relief. This lies solely in a properly performed tenotomy of one or more muscles. But just how to do this does not appear from the books. Authors are divided quite as much as is the muscle in the matter of operation. Various methods are recommended, and the beginner hardly knows first how to take hold of his first case. We have, however, several points of agreement.

1. The section is to be made through the tendon of the muscle close to its insertion in the selerotic.

2. The tendon is to be in every instance entirely cut across.

3. The converging eye is certainly to be operated on with monocular strabismus; it is easy to see which eye demands our interference. But when we have an alternating strabismus, such that the eyes are each in or out as it may happen, the convergence being first in one and then in the other, it would puzzle the beginner to say which was the offending eye, and he might perhaps seize upon that one which happened to be turned in at the moment he came to make the operation.

With binocular strabismus, that is, with both eyes converging, there was left little doubt as to the propriety of operating upon both.

Subsequently it was found that in cases of monocular strabismus, when the convergence was excessive it was impossible to make the correction wholly upon one eye, and in all cases where the attempt succeeded it left that eye much limited in its movement, so much so that voluntary convergence was out of the question. This left the last state of that eye as bad if not worse than its first.

We will close by stating the principal points we desire to make in our present paper.

As a rule operate upon both eyes.

You may risk the correction of a slight convergence on one eye. It will not do, however, to put the limit at 2.5 or 3 lines, as some of our writers do.

I am pretty sure that a line and a half, or even a line is best corrected by a double operation.

I submit the matter to your judgment.

XXXVI.

THE ABUSE OF ATROPIA.

By D. J. McGuire, M.D., Detroit, Michigan.

Having in a few instances, in my own practice, observed what I believed to be bad effects following the topical use of Atropia, it has been suggested to me that we were not sufficiently alive to the evils which may follow the improper use of this drug.

Those cases occurring under my own observation are confined to subjective symptoms and conditions alone, but are supported by the warnings of Mooren and Sickel, and the indications, as earlier suggested by Von Græfe and H. Derby, that Atropia favors the outbreak of acute glaucoma in an eye already affected, and that retinal attachments and other affections connected with disturbances in the choroid may possibly be induced by the same.

As we, as homœopaths, are not much given to its topical use in the external diseases of the eye, I will not refer to the evil results to external tissues—as the conjunctiva, for instance—which may follow its prolonged use there, but will confine my attention to its effects upon the uveal tract, and will first refer to its abuse in ophthalmoscopic investigations, as here it is generally thought to be followed by no bad results, to be perfectly innocent, etc.

This is unsafe teaching, and we are satisfied that evil *may* result to eyes in which there are no disease manifestations whatever, and that it *will* result to those having any of the premonitory symptoms of glaucoma.

Of course it will be apparent that we cannot divide by a close line the cases which may be injured by its use from those which are not susceptible to such effects, but will suggest and insist that Atropia shall have a *very limited sphere in ophthalmoscopy*, and in addition to the cases of glaucoma, or of glaucomatous tendencies, it should never be used in persons of hæmorrhagic tendencies, persons who suffer from hæmorrhoids, varicosity of veins, etc., in any part of the body.

In support of the theory that it should never be used in cases of glaucoma at any stage, I will cite a few examples furnished by our most celebrated observers.

However, referring first to the *early* view entertained by Von Græfe and Schneller, who thought it caused a diminution in the tension of ocular fluids, as evidence of the truth of that position they refer to the enlarged state of the retinal vessels as observed during its action.

This view being sustained by observations made by Coccius, Wegner, Grünhagen, and finally by tonometric observations made by Pflüger on a large number of cases, in 80 per cent. of which he found the tension diminished, in 16 per cent. no change, and in only three increased, it was accepted as true, and acted upon without suspicion of evil in any case, until Wharton Jones observed that it was positively injurious in all cases of acute glaucoma; but that a latent chronic glaucoma could be developed into an acute one by the use of this drug, was first observed by Von Græfe. In a work on intraocular tumors he remarked, that in eyes of a certain degree of increase of tension, where Atropia was used for examination purposes, frequently shortly after its use an *acute glaucoma* was developed.

These cases reported by Græfe were soon followed by others from Derby, Mooren and Warlomont; later, by a case by Hirschberg, of a woman who had never suffered from any eye difficulty, but who, having made an application of Atropia to both eyes, in afternoon of same day had developed headache and vomiting, together with reduction of vision. In eight days an unmistakable subacute glaucoma existed in each eye, for which iridectomy was made with good results. Bezold saw, after two applications of Atropia, an acute glaucoma develop in an eye that

had only presented slight prodromic symptoms, as some sensitiveness and occasional scotomata.

From these observations we must conclude that, in eyes predisposed to glaucoma and in glaucomatous conditions, Atropia is positively contraindicated.

How are these conditions brought about, is a question which very naturally suggests itself, but which is not so susceptible of satisfactory answer.

We may, however, suggest, first, that through the action of the dilator of the pupil the iris is made to contain less blood, and as this takes place the choroidal vessels must become correspondingly hyperæmic; and while in the normal eye, where no resistance is offered to the free exit of blood from the fundus, the condition of hyperæmia is soon relieved,* it is different in the eye predisposed to or already affected with glaucoma, where, either from pathological changes at the periphery of the anterior chamber, or on account of a peculiar physiological construction of the organ, the larger choroidal veins are compressed as they pass through the sclerotica, thus interfering with the free circulation of the fluids of the eye. Then it may not be safe for us to confine ourselves to the mechanical theory alone, for it has been observed that the same condition occurs when the pupil is fixed by a circular synechia, so that a mydriatic effect was impossible.

So that here again we must seek another explanation for these phenomena, which, as suggested by Wegner, *may* be found in a paralysing action on the walls of the vessels, or according to the theory of Stellwag, who thinks that the relief produced by its use in spasm of the internal muscles supplied by the *third pair*, is only in part due to the *paralysis*, the *other* and *chief* factor being the vigorous contraction of the vessels in the anterior portion of the ciliary region.

* In the light of this theory we must conclude that, with the subsidence of the hyperæmia of the fundus, we have also, at the same time, a minus quantity of blood in the eye, which will explain the early observations of reduced tension.

XXXVII.

AUDITORY VERTIGO.

By W. H. Woodyatt, M.D., Chicago.

Last year it was my pleasure to present to this Institute a short paper on Glaucoma. Between that disease and the subject to be treated to-day, there are many points of resemblance, which may be studied with profit, although they cannot be considered now.

The name *Auditory Vertigo* will serve us for the introduction and study of a certain group of symptoms which may appear as primary or secondary expressions of pathological changes, occurring in the vestibule, semicircular canal and cochlea of the ear, one or more of them being involved at the same time. And this statement would seem to place the disease clearly and distinctly in the category of ear diseases to be treated almost exclusively by the aurist. So far from this being the case, however, the affection is one which is, as at present understood, more likely to turn the physician's attention to the brain or stomach as the origin of the disturbance, and is one which almost invariably first seeks relief at the hand of the general medical adviser. When it is added that affections of the stomach and of the brain are frequently the predisposing causes of the ear trouble, and may accompany and complicate it, the commanding interest of the subject will be fully appreciated. The comparatively few reports of cases, the meagre pathological data, the hitherto unfavorable results of treatment, the suddenness of the attacks, and the jeopardy of the important organ of hearing, combine to render the subject pre-eminently one of general interest.

That the true nature of the affection is frequently overlooked cannot be doubted; and with equal emphasis it may be said it cannot be doubted that a correct conception of the malady will lead to the promulgation, by our school, of a more clearly defined and successful treatment than is at present known.

"As early as 1836 Deleau pointed out the fact that too often diseases of the ear—the middle ear, as he supposed—were mistaken for diseases of the brain. He then cites five series of observations in proof that certain peculiar sympathies may exist between the diseased ear and the brain and other organs, as,

"1. Paralysis and convulsions of the muscles of expression in the face.

"2. Impairment and loss of reason.

"3. Occasional but intense dizziness and cerebral malaise.

"4. Frequent and intense vertiginous attacks resembling prodromes of apoplexy.

"5. Fevers may be brought on which have been termed cerebral. . . .

"It seems very evident that this observer had seen many cases of aural vertigo, and that disease so often called Menière's."—*Burnett.*

Menière's disease, labyrinthine vertigo, auditory vertigo, and apoplectiform deafness, are different names suggested by different writers, who have endeavored to interpret the causes and comprehend the range of the group of symptoms referred to.

Menière, in 1861, advanced the following propositions, and endeavored to substantiate them.

1. "An auditory apparatus hitherto perfectly normal may become suddenly the seat of functional disturbances, consisting in noises of a variable nature, continuous or intermittent, and which may be accompanied sooner or later by a diminution in hearing.

2. "These functional troubles, having their seat in the internal auditory apparatus, may give rise to symptoms which have been considered cerebral, such as intense vertigo, uncertainty of gait, turnings to the right or left, and falling, and they may be attended with nausea, vomiting and syncope.

3. "These accidents, which are of intermittent type, are at last followed by deafness, gradually growing worse, and often the hearing is at last suddenly and totally lost.

4. "All this tends to confirm the belief that the lesion which is the cause of these functional troubles, is in the semicircular canals."

Later investigations have shown the necessity for abandoning the belief that the semicircular canals *alone* were the seat

of the disease, and for recognizing the secondary character of these symptoms in many cases, and yet have in other respects confirmed this early scientific statement.

The more characteristic symptoms of this disease are headache, vertigo, fainting, nausea, vomiting, tinnitus aurium, deafness; and the accessory ones are loss of consciousness, cloudiness of the visual field, deafness for certain groups of tones. These form the group that we wish to study. The method of occurrence or recurrence, prominence and duration of certain of them, depend upon a number of modifying circumstances.

All of the names now used to embrace these symptoms will probably be abandoned in favor of more precise ones which will be suggested by the pathological changes, as these are better understood. Even now we are informed of serous, plastic, purulent, and hæmorrhagic exudations which have taken place in the different parts of the inner ear, either idiopathically or consecutively, and have produced part or all of the symptoms included under the name Auditory Vertigo. A sufficient number of post-mortem examinations will enable us to say beforehand to which form of inflammation the existing symptoms are due.

Edward Woakes, of London, England, has recently offered the theory that certain of the symptoms are caused by inhibitory paralysis of the walls of the vertebral artery (or its branch, the auditory) supplying the inner ear. He means this to cover cases only in which the symptoms appear suddenly in a previously healthy ear, unassociated with any other trouble.

The walls of the artery being innervated from the inferior cervical ganglion, and there being a close connection between this and the pneumogastric nerve, he thinks will explain those cases in which primary gastric derangement produces the ear symptoms, as well as the cases in which the nausea and vomiting follow as secondary symptoms.

By presenting a few cases from practice, a better idea will be obtained than otherwise of the manner of approach of the trouble, the misleading tendencies in its expression, the value of given tests to a diagnosis, and some therapeutic hints may be introduced by the way.

The first case is that of Dr. B——, of Delavan, Wisconsin, to

whom I am indebted for a full written report of his symptoms past and present. In 1863 he suffered from malignant malarial fever, which was succeeded by constantly recurring intermittent fever in every conceivable form. He has suffered ever since, and suffers now from chills and fever.

Between 1863 and 1868 a slight double spinal curvature, anterior and lateral, made its appearance. This was relieved by assuming the supine position. In 1866, suffered four months with terrible occipito-cervical neuralgia. In 1868, rheumatism, mostly in the hips, compelled him to go on crutches during six weeks.

In August, 1869, was taken suddenly with rambling in his words, then nearly complete inability to speak, with numbness of the right side, especially of the tongue; also inability to write his symptoms. In two or three hours these symptoms disappeared, but before night reappeared with greater severity, and grew gradually milder until all had gone in three days.

Notices now that overwork or loss of rest will cause him to "misspeak his words."

In 1871, suffered for seven months with proto-occipital neuralgia, which he cured with Iodoform and Iron, after failing with everything else. (The doctor speaks highly of these remdies for neuralgia.)

In 1876, was at a lawn social, in his usual health, though he had been restless and sleepless for a number of nights. May have taken a little cold. Was taken suddenly dizzy and sick at the stomach, staggered and reeled, had to cling to things for support. When on the bed it seemed to him as if it moved up and would spill him out. During two days found relief only by lying motionless; gradually was able to get up and about. *After this began to be deaf* and have ringing in his left ear like a waterfall. These have continued since, but are slightly better.

In 1877 (July 4th), having previously "felt shaky for some time," blew his nose suddenly and fell to the ground, as if knocked with a club. For a moment was unconscious. During the same morning repeated this experience while conversing with a gentleman on the street.

For a good while after this was weak, nervous and unsteady on his feet, *especially after dark.* Nervous debility and *dyspepsia*

have been his enemies. Thought he was threatened with locomotor ataxy, because if he started suddenly he was likely to stumble backwards or sideways first.

I examined this case in May, 1878. Found the external appearance of the drumheads almost negative. The watch could be heard in contact on the left side. The *tuning-fork placed between the teeth could only be heard in the right or good ear.* Without knowing a word of the previous history, but from the physical examination alone, and particularly the behavior of the tuning-fork, the diagnosis of auditory vertigo was ventured. The tuning-fork test is not free from the possibilities of error, and in every case so much could not be based upon its behavior. But with an intelligent patient, when the test is carefully made, it teaches a great deal. When the auditory nerve is diseased, the vibrations of the tuning-fork through the head are not perceived at all, or to a diminished extent; whereas, when the conducting apparatus of the ear is alone defective, the vibrations of the fork are intensified in the worst ear. It will be observed that this "*perosseal audition*" figures prominently in all the cases.

Without discussing the antecedent history, which is exceedingly interesting in this connection, we may say that the seizure at the lawn party was caused by sudden change of pressure in the ampullæ of the semicircular canals, and that the changes caused thereby did not invade the cochlea until two days later, when the tinnitus and deafness were observed. The dizziness, nausea and vomiting might appear from impairment of the function of the semicircular canals, but the deafness, and particularly when it is only to certain tones, implies involvement of the cochlea. The many and brilliant experiments made by eminent physiologists upon the semicircular canals of animals, and compared with post-mortem revelations in man, have placed us in possession of very accurate knowledge concerning the action of this part of the auditory apparatus.

It seems to have been positively demonstrated "that the semicircular canals constitute an organ which is the seat of origin of impressions necessary for the due maintenance of the equilibrium of the head, and with it of the body." Ferrier tells us that the maintenance of equilibrium involves the conjoint operation of three

factors; 1, afferent nerves; 2, a coördinating centre; 3, efferent tracts, in connection with the muscular apparatus concerned in the action, and that the afferent apparatus mainly consists of three great systems, which in conjunction form that synthesis in which the due maintenance of equilibrium and coördination depend. These three systems are, 1, organs of reception and transmission of tactile impressions; 2, organs for the reception and transmission of visual impressions; 3, the semicircular canals, with their afferent nerves. Without the labyrinthine impressions, optic and tactile impressions are of themselves unable to excite the harmonious activity of the centres of equilibration.

In auditory vertigo there seems to be abnormal irritation of the ampullæ of the semicircular canals, and consequently there is a tendency to, or actual overthrow of the equilibrium in the direction which corresponds with this irritation, *i. e.*, to the right when the irritation is in the left horizontal ampulla, backwards when the irritation affects the superior vertical, and forwards when the irritation is in the posterior vertical ampulla. In health labyrinthine impressions "seem to be essentially dependent on the degree and relative variations in pressure exerted by the endolymph upon the ampullary dilatations of the membranous canals on which the vestibular nerves are spread."

In the stationary position of the head a statical equilibrium exists. With each variation in the position of the head the tension on the ampullæ will become altered; the tension being, by the law of liquid, greatest on the most dependent ampulla. Thus, if the head is inclined to the right side the pressure of the fluid in the horizontal canals will become altered, the fluid flowing *from* the right ampulla and therefore diminishing the pressure, and *to* the left ampulla, so that the pressure of the left ampulla will increase correspondingly.

By these symmetrical plus and minus variations the centres of coördination are excited to appropriate activity, and the equilibrium is maintained.

When the conditions are perverted by lesions of the canal, disturbances of equilibrium are the necessary result, and these will vary according to the seat of the lesion and the seat of impression which it disturbs.

In the case before us, the second attack, caused by blowing the nose, would appear to have been produced by sudden increased pressure on the vestibule imparted through the base of the stapes, the middle ear being suddenly filled with air through the Eustachian tube. It ocasionally happens that quick and forcible inflation of the middle ear, through the catheter or otherwise, will produce a similar result in a perfectly healthy individual.

The unsteadiness noticed after dark shows us how much he was depending on visual impressions conveyed to the coördinating centre, the cerebellum, to compensate for the faulty impressions of the semicircular canals. He was virtually then relying solely upon his tactile impressions. The condition resembles locomotor ataxia to this extent, that as it was he was relying upon his tactile impression alone; while with locomotor ataxia he would have been relying upon his labyrinthine impressions alone. In the latter disease there would have been numbness in the soles of the feet and the lower extremities, with diminished or entire absence of sensibility to cutaneous impressions.

CASE II.—Miss B., thirty-four years, had known for some time that her hearing was not acute, but it was not impaired enough to cause her to seek help. Was overtaken with a general sensation of giddiness, which was increased by very slight causes, like looking from an upper window at passing objects, or watching a carriage; the dizziness led to nausea; objects appeared to waver from side to side; prostration followed, and in a week she was compelled to go to bed. At this time a tremendous roaring like a mill-dam appeared in the right ear, and also marked deafness. She was treated during three weeks by her physician, and was able to get out at the end of that time. She had suffered all the time with the dizziness and a great deal of occipital headache. One day in walking in the yard she fell flat on her back, and did not realize that she was falling until she struck the ground; sickness of the stomach followed. Several times afterwards the same thing occurred; giddiness would be produced by sudden movement, after getting off a car or out of a carriage, or by stopping the canal of the right ear with her finger. After dark or with closed eyes it was almost impossible for her to walk without falling. She was always assisted by

taking hold of her chin tightly with her fingers, and as she expressed it, "following her nose." An examination showed evidence of non-suppurative inflammation in both ears, and the hearing of the watch was impaired on both sides, being heard on the left 14″ on the right 2″. The tuning-fork between the teeth was heard only on the left or better side. With the finger in the right canal the fork still sounded only in the left ear. Whatever the previous condition had been, the tuning-fork now showed defective "perosseal audition" on the right side.

The patient took *Petroleum* 6ˣ twenty-three days. In this time the vertigo diminished very much, and hearing rose to 9″ on the right side. She was then placed on *Argent. nit.* 6ˣ, for the symptoms, "staggers when walking in the dark; has to hold on to things;" "buzzing in the ears;" general debility. At last report she was decidedly better.

CASE III.—Mrs. S., fifty-five years, had suppurative inflammation of the right ear when a child. It has appeared off and on almost ever since, discharging for a time, then quieting down, but leaving a permanent perforation of the drumhead. The left ear seemed to be perfectly sound up to February, 1878. Had suffered for two or three months previously with bronchial catarrh. Was taken with general weak, prostrate, worn-out feeling, but seemed to rally under the treatment of her family physician in two or three days and went out. Thought she overdid it and felt badly again. That night she snuffed some salt water up her nose, as had been her habit for some time, but noticed this time that it produced a crackling in her left ear as if something gave way. The day following the hearing suddenly disappeared, marked dizziness occurred, and a loud ringing noise was heard in the ears. The next day a discharge appeared from the left ear and continued about two weeks. During this time, if the patient tried to sit up the dizziness was much worse, and she had to be held or she would fall back. Later when she was able to walk some, she would reel and stagger unless she held on to something. Did not speak of nausea and had no vomiting. I saw the case in counsel with my friend Dr. J. S. Mitchell, about the end of the second week. Found the drumhead thick, white, saturated, and perforated at its lower

margin. Tuning-fork not heard at all on the left side when placed in the teeth; the watch was not heard at all. The patient had to be spoken to in a very loud voice. Her former trouble had greatly impaired the right ear, but it was now the better of the two. Under Petroleum 6^{x}, four times a day, and later Strychnia 3^{x}, the dizziness entirely disappeared, and the hearing power is gradually increasing.

In this case the inner ear was affected secondarily, and yet presented the essential features of auditory vertigo.

CASE IV.—Has been supplied me by the courtesy of Dr. Whitman, of Belvidere, Illinois. "W., aged seventy; male. Had been under allopathic treatment two months for suppurative inflammation of the middle ear of both sides. Had been gradually growing deaf for several years, but since the commencement of the present trouble had not heard even the loudest sounds. I found the right ear painful, swollen externally and in the meatus, from which a thin yellowish discharge was oozing. On the left side there was less pain and swelling but more copious discharge. The bones around the ears were tender to touch, especially the right mastoid. He suffered great pain during the day, so agonizing at times as to make him wish for death, and was very restless and nervous at night. Under Belladonna, Mercurius, Hepar and Arsenic, and a local application of Belladonna and Glycerin, he gradually improved, and was discharged. In two weeks he took a severe cold, which caused a return of the old symptoms. Of these he was again so much relieved as to be able to go about, but was still stone deaf, and some discharge remained. Once more he took cold, bringing back the old symptoms and some new ones.

"An excessive dizziness seized him so that he could not assume the erect position without being sick at his stomach, and everything in the room appearing to turn around. He did not seem to move himself, but the things around him moved. His tongue indicated a deranged stomach and liver; and supposing the dizziness might proceed from that source, I placed him upon Nux, Podophyllin and Bryonia, under which the tongue cleared and the stomach assumed a healthy action, but the giddiness and nausea remained, though diminished. I now became satisfied

that the ear trouble had extended to the labyrinth, and that this was the seat of the trouble. He was now able to walk with cane and crutch. I put him upon Silicea 6^{x} and 200, and by letter consulted Professor Woodyatt. He confirmed the diagnosis and recommended, in case Silicea failed (though it was well indicated), to study carefully Strychnia, Salicylate of soda, and Petroleum. Ten days use of Silicea showed no improvement. I then gave Strych. 3^{x} and Soda salicy. 1^{x} in alternation once in three hours. In three days there was marked improvement, and in three weeks, under its continued use, he was relieved of all his labyrinthine symptoms."

CASE V.—The following details have been kindly supplied by Dr. Bingham, of Harvard, Illinois:

"S. B., sixty-three years, had whooping cough at nineteen, followed by asthma as a sequel, for which he received allopathic treatment for six or eight years. Indigestion set in, no doubt caused by the medicine given for the asthma. After trying in vain to get relief from old-school doctors, he took calcined egg-shells ground up with the lining of pigeons' gizzards, from an old woman, and gained a fair condition of health, the indigestion appearing only after some indiscreet eating. In 1845 gastric troubles returned, and was controlled by Carbonate or Bicarbonate of soda or potassa. Whenever the difficulty appeared it was checked in this way, so that a good deal of the drug was taken between the first of it and six years ago. In 1872, he first noticed dizziness, slight in amount and coming at long intervals. As time passed the attacks became more frequent and severe, and were accompained by roaring in the ears, nausea, and slight blindness. He felt unsteady in trying to walk. The attack would pass away entirely and leave him clear.

"In 1876, he had a severe attack, and fell in the street suddenly while going to his shop.

"Although under constant treatment for gastric vertigo for six weeks he did not get well, and wrote me for medicine. I naturally fell into the way of my predecessors, and attributed the trouble to his gastric difficulties. During a year I gave him Arenic, Cocculus, Cham., Argent. nit., and Carbo veg. He

seemed to improve slowly under the treatment, and last October said his health was better than it had been for months.

"But in April, 1878, he had another attack, more severe than any preceding one. He fell suddenly in the street, and could not control his limbs at all. Violent vomiting ensued, and the hearing was very dull. Dizziness and vomiting came in paroxysms of about half a minute duration and at half hour intervals. There was soreness of the stomach. Prescribed Bismuth and Cocculus ind., and laid my case before my friend Dr. Woodyatt, of Chicago. He diagnosed the case as one of labyrinthine vertigo, and recommended Petroleum 6x to be given first. His prescription was followed and the remedy given for two weeks, after which Silicea was administered.

"My patient is improving quite rapidly, with a fair prospect of recovery."

In this case I did not see the patient, and cannot report as to the condition of the drumheads and the conduction of sound.

It is a nice question to determine positively, whether in this case the stomach or the labyrinth should be regarded as the centre of the morbid process.

It seems not improbable "that the viscera are in relation with the centres of equilibrium, and that they mutually affect each other." The stomach vertigo described by Trousseau may perhaps be produced by abnormal impressions originating in the visceral nerves, although he does not seem satisfied of this himself. The relation between the viscera and the centres of equilibration is exemplified in the phenomena of sea-sickness.

It was the likeness of sea-sickness to the symptoms of auditory vertigo that first suggested to me the closer study and practical application of Petroleum. Mr. Woake, in trying to trace the connection between the stomach vertigo and the labyrinth says: "A very direct channel of communication is established between the pneumogastric nerve and the lower cervical ganglion by means of a fasciculus given off by the former about the point where the recurrent laryngeal leaves the trunk of the nerve." . . . There can, we think, be no doubt that this correlation is effected in the inferior cervical ganglion through the medium of the communication just noted from the pneumogastric to the gan-

glion, impressions passing along which become in it transferred to the inhibitory nerves furnished to the vertebral artery from the ganglion.

The following remedies suggest themselves as bearing a relation to the disease under consideration:

Petroleum, *Silicea*, Strychnia, *Salicylate of soda*, Kreasote, Carbolic acid, Alumina, *Argent. nit.*, Tabacum, Quinine, Nitrum, Cocculus.

XXXVIII.

VISIBLE SPEECH AS AN ELEMENT IN THE INSTRUCTION OF DEAF MUTES.

By Henry C. Houghton, M.D., New York.

It may be well to call the attention of the profession to a collateral matter in which the advice of the physician may be of life-long value to the sufferer, and a comfort and even joy to the afflicted parents, namely, the instruction of the deaf mute. Our hearts are pained and our sympathies drawn upon as we see the gradual retraction of all those mental acts which depend upon sound-waves for their exercise and even their existence. In the congenital deaf mute the state is sad indeed, but in acquired deaf-mutism we find ourselves powerless before a steady increase in deficient articulation, this increase keeping parallel with the decrease in audition. Former methods of instruction in articulation did much to remedy the evil, but still left much to be accomplished in this direction. The method known as "Bell's System of Visible Speech" commends itself both by simplicity and by the results reached when properly and patiently practiced.

In an article by the inventor's son ("Visible Speech," etc., by A. Graham Bell, Boston, Mass., published in *American Annals of the Deaf and Dumb*, vol. xvii, No. 1), the writer gives a brief summary of his plan, similar to that given in a pamphlet entitled *Nature and Uses of Visible Speech:* "In its application to deaf-mutes (1) the system does not interfere with any existing plan of education. Visible speech takes *no part* in the contest between articulation on the one hand and signs and manual alphabets on the other. In presenting his system for adoption, all the inventor means to say is this: 'Here is a means by which

you can obtain perfect articulation from deaf-mutes; *make what use of it you choose.'* He places the *tool* in the hands of teachers, with general directions how to use it."

(2.) "Visible speech is not necessarily associated with lip-reading. There is no doubt that, in schools where lip-reading is employed, the symbols will materially assist the pupils by showing them *what to look for* in the mouths of hearing people, but this is apart from its greater sphere of usefulness as a means of communicating articulation."

(3.) "Visible speech does not profess to teach the deaf to *modulate their voices;* it deals with articulation, pure and simple. There is no doubt that the quality or 'timbre' of the voice may be influenced, and future experiments will show how far a harsh and disagreeable voice may be made soft and pleasing by means of them."

It is not the purpose of this article to enter upon the *pros* and *cons* of articulation, visible speech, and sign language or manual alphabets. I have chosen to mention visible speech in order to urge all physicians to inform themselves upon the main points of education of deaf mutes by articulation. It is now over ten years since the old system of instruction by manual signs was brought into contrast with articulation in this country, and the merits of the latter method have been so marked that the older institutions have been compelled to adopt articulation, in a measure at least. Not only is the mute enabled to converse with speaking people, but his physical health is enhanced by the respiratory effort made necessary by articulation. Mr. Greenberger, Principal of the New York Institution for the Improved Instruction of Deaf Mutes, tells me that statistics show that the deaf mute is more subject to pulmonary diseases than the speaking child.

During the last ten years a large number of deaf-mutes have come under my observation, and in a number of instances I have seen them taught by articulation in private and in schools. I am glad to urge every one interested to the patience and self-denial demanded by articulation, knowing that they will be rewarded in future years by hearing their dear children and pupils using our own perspicuous English language as a means of com-

munication, and by it being led out to a wider sphere of usefulness and happiness.

Two institutions have been prominent in this work in America, viz., the Institution for Improved Instruction of Deaf Mutes, New York City, and Clarke Institution for Deaf Children, Northampton, Mass. Parents and physicians can learn more fully of this matter by visiting the schools or communicating with the principals.

APPENDIX.

DISCUSSION.

THIRD DAY—MORNING SESSION.

DR. J. P. DAKE, of Nashville, Tenn: I wish to call attention to the sympathy between the viscera and the eye. Some twenty years ago I had a case of dysentery in a little boy. After he recovered from the flux he was found to be blind, and remained so for nearly six weeks. He was well in all other ways and the look of the eye was unchanged. I could discover no lesion, and yet the blindness continued. After the lapse of five or six weeks the sight gradually returned and returned entirely. Petroleum has been mentioned for eye affections, and it is also a medicine I have used in dysentery and other bowel troubles.

DR. J. H. MCCLELLAND, of Pittsburg, Pa: I was much interested in Dr. Woodyatt's paper, and since hearing it a case comes to mind. My own brother has tinnitus, which began as an erythematous eruption, not extended outside the ear, and which lasted for five years. I tried everything I had; I placed him under the skilful attention of Dr. Houghton; I had him under the best oculist and aurist in our city, and all without relief. The mention of Petroleum recalls the fact that for three years, in his business, he was brought into contact with Petroleum constantly and daily, and I am sure it produced this trouble. Dr. Woodyatt suggests this remedy in aural vertigo, which is akin to the tinnitus.

It is very possible that my brother, in handling Petroleum, daily put his hands afterwards about his ears; it was there absorbed, producing these effects.

DR. G. S. NORTON, of New York: Since this paper has been taken up, I wish to remark that Gowers has written one of the most extensive treatises on auditory vertigo that we have in the language, which was published about two years ago in the *London Lancet*, and in which he describes the pathology, and gives cases, with certain remedies. He then says that Salicylate of soda in large doses produced this trouble, and he says that with

it he has cured a certain number of cases, and recommends this remedy.

I have seen it used with good results in this trouble.

DR. W. H. WINSLOW, of Pittsburg: I have much relieved some mild cases of auditory vertigo with Quinine. We find accompanying this and other diseases a condition of hyperæmia affecting the ear in general, its whole circulation, due to we know not what. Sometimes it is disease in the middle ear or in the external ear, or in some parts adjacent, producing reflex troubles and a variation of the troubles, and the same pathological change is produced by auditory vertigo.

Does not Quinine produce just such a disturbance? Some two years ago a case of aural vertigo, accompanied with other and very severe symptoms, was cured by an allopath in Germany with Quinine. He of course gave it upon general principles. I believe the disease sometimes follows cerebro-spinal meningitis.

I believe Quinine produces a hyperæmia of the internal and middle ear, and that there is a condition simulating that in this disease.

I have seen, in the treatment of pannus, clear Tannic acid powder blown directly into the eye produce excellent results, but I think we should not abandon our Nitrate of silver.

It is one of our best remedies in eye diseases of the poor; it has been used in external diseases; it is extensively used by the Germans.

I should be much opposed to giving up its use, as I think it an important topical application. I had recently, in the Pittsburg Hospital, a severe case of pannus in a steamboat captain; he had had the disease for months, sometimes very severely; sometimes it would subside. He could not attend to his duty. I gave numerous remedies, Arsenic, China, etc., but the disease got worse. I had applied a weak solution of dry Alum, and had in the beginning used Sulphate of copper. The man's eyes were going pretty fast. A superficial corneal ulcer formed on the right eye, spreading over one-eighth of the corneal surface, and threatening destruction to the eye. Now my experience and old-school teaching are, that no caustics should be applied to ulceration of the cornea, but it should be treated by Atropia, and ice applications, and soothing washes, and then when the violent inflammation had subsided, we might apply caustics to the eyelids. Stimulants should not in these cases be used until the proper time.

I felt much anxiety for the man, and owing to the condition of the lids, I applied a four-grain solution of Nitrate of silver daily.

In three days the corneal ulcer was nearly healed, and I continued the application at intervals of every third day for two weeks, and the eyes, from as bad a condition as I ever saw, went on steadily improving until at last even lachrymation ceased; the discharge became very small; the ulcer was entirely healed. Therefore, I think we should stick to our good old friend, the Nitrate of silver. It has saved many cases. Too strong a solution should not be used. It is more or less by absorption that we get its effect in reducing the oversensibility of the lids. The Nitrate of silver, like Carbolic acid, is a local anæsthetic, and produces less irritation than any other caustic application, because it diminishes the sensibility of the parts.

DR. WILLIAM GALLUPE, of Bangor: Will not the internal administration of Nitrate of silver do as well as its external application?

DR. WINSLOW: I do not believe it.

DR. GALLUPE: Have you ever tried it faithfully?

DR. WINSLOW: I have given the Nitrate of silver.

DR. GALLUPE: For diseases of the eye.

DR. WINSLOW: I do not use it in that way. I have given it because authorities recommended it, but I use it on the lids. I consider it is an allopathic application, if it is anything; it is only a mechanical method of awakening the morbid tissue to a healthier action. We have engrafted the old-school notions regarding the topical use of remedies, and then we go to work and give the same remedies internally. I do not believe this is right. I do not believe that because we apply Nitrate of silver to the lids with good results, there is any reason for giving Nitrate of silver internally. It is not homœopathic, for it does not suit the symptoms. We should use more care in internal administration.

DR. GALLUPE: You call it an allopathic application?

DR. WINSLOW: It belongs to no school, but is used by the homœopathist and the allopathist; it is a curative measure, and we all adopt it.

On motion the discussion was closed.

SECTION XI.

REPORT

OF THE

BUREAU OF GYNÆCOLOGY,

HENRY N. GUERNSEY, M.D., ... Philadelphia.
R. LUDLAM, M.D., ... Chicago.
S. S. LUNGREN, M.D., ... Toledo, O.
THOMAS MOORE, M.D., ... Philadelphia.
O. P. BAER, M.D., ... Richmond, Ind.
T. S. HOYNE, M.D., ... Chicago, Ill.
G. E. E. SPARHAWK, M.D., ... Gaysville, Vt.
H. C. ALLEN, M.D., ... Toledo, O.
O. S. RUNNELS, M.D., ... Indianapolis.
B. F. BETTS, M.D., ... Philadelphia.
H. W. FULTON, M.D., ... Pittsburg, Pa.
J. C. GUERNSEY, M.D., ... Philadelphia.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 4.

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XII.

THE VALUE OF THE CLINICAL THERMOMETER IN THE PUERPERAL STATE.

By H. N. Guernsey, M.D., Philadelphia.

Mr. President and Gentlemen: The Bureau of Gynæcology chose for its special consideration, during the past year, *Puerperal Thermometry,* with a view of ascertaining the value of the clinical thermometer as predictive of puerperal or lying-in sickness, such as puerperal fever, metritis, post-partum hæmorrhage, convulsions, phlegmasia alba dolens, etc. The results of these observations have led me to the following report:

The history of the origin, development, and gradual progress toward perfection of medical or clinical thermometry, for the past one hundred and fifty years, shows no exception to the rule that all great and valuable discoveries are, in their growth, slow but sure. It is an interesting fact in this connection that in a work published by Dr. James Currie, in the year 1797, thermometry appears as pervading his entire practice; but notwithstanding his great devotion to this subject, and the light he brought to bear upon it, very little influence was made in his day on the medical fraternity. In referring to Currie's labors, Seguin says: "For many years his *Medical Reports* stood alone, like the Giant's Causeway, a melancholy monument of what a single man can conceive, and the many cannot comprehend."

Yes! thanks be to the allopathic school, during the past century and a half a little instrument has been discovered and brought to great perfection, with which we may prove by actual figures the accuracy of Hahnemann's great system of medicine—

a system which he alone conceived, and which, *another melancholy fact*, the many do not as yet comprehend. The real use of the clinical thermometer has only just begun to dawn upon the profession, and without Hahnemann's medical precepts it could never be fully utilized. These develop its marvellous sphere of efficacy, and crown it as an eternal arbiter in the exercise of the law *similia similibus curantur*.

I know the instrument in question has been very useful in many ways to those operating under the old law of *contraria contrariis;* but to us who favor Hahnemann's teachings, obeying them strictly, it attains the highest place and utility. We claim for it all that its inventors do, and infinitely more. As the greatest duty of the physician is to restore health to the sick, all the means which assist in governing and deciding our course of action in this exalted art surely deserve a superior rank.

In the hands of our medical opponents the thermometer is chiefly used as an auxiliary in making a diagnosis or prognosis. And though admitted by them that a high range of temperature may, by a forcible remedy, be brought to the norm, Seguin and others, high in old-school authority, declare there is no confidence to be placed in such a change. Now we of the homœopathic school have discovered that a remedy prescribed in full accord with the Hahnemannian principles, produces a salutary effect upon the patient, and causes the temperature gradually to approach the norm, there to remain. And more: if in the progress of cure, in many cases at least, the pulse, respiration and sensations of the patient should not appear to be favorable, so long as the thermometer continues to indicate a satisfactory thermic condition, the remedy should not be repeated or changed. While *per contra*, should the pulse, respiration or sensations of the patient appear to be more favorable but the thermic condition is less so, would it not be correct to repeat our remedy or change for a new one?

Is there not invariably in any given case a uniform relation or correspondence between the homœopathic remedy and the thermic condition?

It appears to me that herein lies a very important question, well worthy the most careful consideration and investigation

of the profession at large. Further observation is needful before a positive decision can be reached, but what has come under my notice so far strongly inclines me to the affirmative. If this is ultimately proved to be the case the labors of the physician will become much simplified and far more certain, and many an anxious doubt will be dispelled by the clear light of a reliable "truthteller."

As the thermometer really does differentiate when all other means utterly fail, and as it furnishes a link in the chain of evidence of an approaching cure or the progress of a disease, which could be furnished in no other way, we ought to acknowledge it as a *sine qua non*, and should seek diligently to acquaint ourselves thoroughly with this aid in our work of healing the sick.

The idea of using the thermometer as a guide in the management of a case of sickness, whether to repeat or change the remedy, occurred to me while making some observations on puerperal thermometry in consequence of my appointment to this bureau one year ago. After mature reflection upon this matter in connection with causes and sequences in nature, I became satisfied that my conception was perfectly correct, and that we now hold in our hands an instrument capable not only of affording us indispensable aid, but also of proving beyond the cavil of a doubt, even to a mathematical certainty, that the principles unfolded and explained in *Hahnemann's Organon* and *Chronic Diseases* are perfectly true. And thus we have a system of medicine which is vastly superior to any other in the world.

To facilitate this matter to the utmost in a limited time, and that I might bring to this meeting, if possible, satisfactory proof of the soundness of my views, I at once prepared charts and issued circulars designed to further my proposed end. By request, most of our journals responded nobly in publishing these notices, and they thus obtained a wide circulation. At my call a goodly number of physicians immediately tendered their services; and their reports go far towards confirming the validity of my theory. I have received in all about seventy cases, reported according to the plan of my circular; some of them are very valuable, highly instructive, and well worthy of publication. These I hereby present to the Institute. For assistance thus ren-

dered, I am indebted to Drs. O. P. Baer, D. H. Beckwith, Helen Bedell, B. F. Betts, L. W. Carleton, H. W. Fulton, J. J. Griffith, B. W. James, G. M. Pease, A. M. Piersons, Sophia Penfield, O. S. Runnels, and B. Whittier.

Thus far no new facts have been revealed by this bureau in the matter of diagnosis or prognosis beyond what is stated by *Seguin* and other observers. But these reports do unmistakably show that in all cases where a high temperature prevails, the true *similimum*, even in the highest potencies, brings the thermometrical figures slowly and surely to the norm, and health is re-established.

Mr. President, in closing this report I beg leave to offer the following:

Resolved, That this Institute create a *Bureau of Medical Thermometry*, whose duty it shall be to investigate from year to year the clinical thermometer as a guide in the treatment of the sick, reporting and demonstrating the same at our annual meetings.

XIII.

THE TEMPERATURE AND THE PULSE IN PUERPERALITY.

BEING AN ANALYSIS OF FIFTY CASES TREATED IN THE PUERPERAL WARDS OF THE HAHNEMANN HOSPITAL OF CHICAGO.

By R. Ludlam, M.D., Chicago.

GENERAL REMARKS.

The practical value of the thermometer in the lying-in chamber cannot be settled by any one physician. Before we can know what it is worth and what it teaches, we must gather and sift the observations of many who are engaged in public and private practice, and who have brought their contributions into the storehouse for this especial purpose. For Puerperal Thermometry is too broad a subject to be included in a single report of this bureau, or to be mastered by any of us in our own fields of labor exclusively.

As a second contribution to the literature of this subject, I herewith submit an analysis of *fifty* cases that have been taken from those in my charge in the puerperal wards of the Hahnemann Hospital of Chicago. As a guarantee of good faith in the details that are given, I also submit a volume of the *Hospital Records* and the prize reports of my puerperal clinics, which were taken during the past winter and spring by Messrs. W. A. Barker and R. C. Miller, medical students. The members of the Institute will find in them the data from which this paper has been prepared.

Our unvarying practice in the hospital is for the house physician or his assistant to take the temperature and the pulse of all lying-in patients every morning and evening, and to record them immediately. This is done as nearly as possible at 8

o'clock A.M. and at 8 P.M. At these hours the patients are in a quiet state, not having been disturbed by the visits of my clinical classes, or by any other cause of excitement.* In very bad cases the records show that these examinations are also made at other times of the day and night; but the charts which accompany this paper have been drawn from the figures noted at the morning and evening visits.

Excepting in cases of pneumonia, of pleurisy, or of abdominal peritonitis (in which the increased rapidity of the respiration might invalidate the record), and in hysteria or convulsions of some kind, the bulb of the thermometer is always placed beneath the tongue and the mouth closed. The rule is to leave the instrument there *for the space of three minutes by the watch.*

The pulse is also taken with the greatest care, and is not merely approximative but accurate.†

Every patient has her number, and these figures are preserved herein. To avoid confusion, I have arranged the cases according to my own classification of the puerperal diseases, which classification may be made to include all the diseases and conditions of lying-in women. It is as follows:

I. NORMAL CONVALESCENCE.

II. ABNORMAL CONVALESCENCE.

1. *The Septic Period.*
   - *a.* Puerperal Septicæmia.
   - *b.* Septic Inflammations.
2. *The Pyæmic Period.*
   - *a.* Puerperal Pyæmia.
   - *b.* Pyæmic Inflammations.
3. *Septic Pyæmia.*
4. *Miscellaneous.*
   - *a.* Puerperal Chorea.
   - *b.* Puerperal Mania.
   - *c.* Puerperal Rheumatism, etc.

* Winckel has observed an increased temperature of from one to one and a half degrees after the visits of the students at the bedside of these patients.

† This report being limited to the temperature and the pulse, all irrelevant details, however practical, are omitted; otherwise the complete clinical history of these cases would be given.

I. NORMAL CONVALESCENCE.

Our hospital patients are admitted on the eve of their confinement, and not unfrequently while they are in labor. We know little or nothing of their previous history. Many of them are to become the mothers of illegitimate children; most of them are primiparæ; all of them are needy and destitute. They have had no preparatory treatment. The labor is conducted by my colleague, Professor Leavitt, in the presence of the obstetrical class, and when that is over the mother is placed in my care in the puerperal ward.

These experiences have their effect in increasing the proportion of those who do not pass through their lying-in without suffering from disease in some form, and they explain the fact that in our hospital, as in others, there are fewer cases in which women escape the various puerperal affections and have a perfectly normal convalescence than in private practice. The compensation comes through the clinical study of these cases, and through a corresponding improvement in the literature of the subject.

I ought, however, to say that our records of natural, physiological cases have been kept with the same care as the others, and that they have been studied as points of departure for all the others.

Out of the fifty only ten cases can be classed as *normal*, and in them the pulse-curve is by no means so uniform as that of the temperature. Making allowance for the so-called "milk-fever," for indiscretion in diet, and for the effects of mental worry, the temperature in these ten cases did not vary more than about two and a half degrees. But the pulse had a much greater latitude, for its average fluctuation was thirty beats, and its other qualities were equally deceptive.

The temporary rise in the heat-line, in all these cases, was generally due to an increase or diminution in the quantity of milk secreted, and not to the establishment of the flow, unless the lochia were suspended and the first eruption of the milk had been delayed. Under the head of Septicæmia we shall speak of the critical period that is incident to the first stage of lactation.

ANALYSIS OF FIFTY PUERPERAL CASES.

FROM THE HAHNEMANN HOSPITAL OF CHICAGO.

No.	No. of case.	Name of Disease.	Temperature. Maxim.	Day.	Minim.	Day.	Differ.	Pulse. Maxim.	Day.	Minim.	Day.	Differ.	Chills.	Mode of Termination.	Duration.	Observations.
1	525	Septic peritonitis	104°	3	97 4/5°	10	6 1/5°	140	3	80	10	60	One on the 2d day	Effusion 7th day	11 days.	
2	1276	Septic pyæmia	105	10	99	1	6	120	2	72	1	48	Recurrent chills	Mammary abscesses	15 "	
3	2099	Septic peritonitis	104	2	97 1/2	1	6 1/2	145	2	80	10	65	On 5th and 6th days.	Effusion	18 "	One relapse
4	2100	Normal convalescence	100 2/5	2	98	1	2 2/5	95	3	75	5	20			10 "	
5	2174	Septic pyæmic uterine lymphangitis.	105	3	98 2/5	21	6 3/5	115	8	62	18	53		Resolution	21 "	
6	2235	Normal convalescence	100 4/5	4	98 2/5	1	2 2/5	100	2	65	1	35			10 "	
7	2275	Septic endometritis	105 4/5	2	100 1/2	1 & 12	5 3/5	140	2	110	1 & 12	30		Diaphoresis and profuse lochia.	12 "	Intermittent lochia.
8	2791	Septic metritis	106	3	97	9	9	120	2	64	10	56	On 2d and 3d days	Offensive lochia	10 "	
9	2807	Septicæmia	102	5	98 2/5	2	3 3/5	100	5	80	3	20	One on 4th day	By the lochia	9 "	
10	2809	Septicæmia	104	5	99 1/2	1	4 1/2	160	5	70	1	90		Death	5 "	
11	2974	Puerperal chorea	106	16	97 3/5	23	8 2/5	120	17	60	1	60	Recurrent chills	By limitation	27 "	
12	3002	Normal convalescence	101 1/5	1	97	5	4 1/5	92	7	70	5	22			9 "	From 2d month of gestation.
13	3003	Normal convalescence	101 1/5	2	97 3/5	1	3 3/5	95	1	65	8	30			9 "	
14	3004	Septicæmia	102 4/5	2	98	10	4 4/5	94	2	60	11	34		Elimination	11 "	
15	3005	Septic pyæmic endometritis	106 1/5	9	97 2/5	12	8 3/5	126	10	66	19	60	Recurrent chills	Diarrhœa	28 "	
16	3081	Puerperal mania	99 3/5	23	97	1	2 3/5	96	11	70	1	26		Diarrhœa	25 "	
17	4005	Puerperal mammitis	104	27	98 1/5	30	5 4/5	120	27	70	23	50	Frequent chills	Resolution	32 "	Occupied private rooms.
18	4012	Septicæmia	102 4/5	2	98 2/5	2	4 3/5	102	5	72	2	30		Elimination	10 "	
19	4015	Normal convalescence	100	11	98	2	2	100	11	60	12	40			12 "	
20	4027	Puerperal rheumatism	100 3/5	12	98 1/5	22	2 3/5	96	12	60	1	36	Sev'rl nervous chills.	Limitation	24 "	

21	5005	Septic ovario-peritonitis	104 2/5	5	97 3/5	27	7	125	4	60	23	65	Recurrent chills	Effusion	28	"	
22	5025	Spurious peritonitis	101	11	99	2	2	100	14	64	4	36		Limitation	14	"	
23	5039	Normal convalescence	101	4	98	23	3	104	4	60	2	44			25	"	
24	5555	Pyæmic ovaritis	104 1/2	17	98 1/2	1	6	112	17	66	14	46	On 16th and 17th dys.		21	"	
25	6050	Pyæmic mammitis	102 1/2	16	98 1/2	11	4	104	12	79	15	25		Resolution	20	"	
26	6061	Puerperal hysteria	105 2/5	8	99	1	6 2/5	121	8	75	3	46	Nervous chills	Limitation	25	"	A very rare case
27	6100	Metro-phlebitis	102 3/5	2	97 1/2	1	5 1/5	100	2	46	14	54	One chill on 6th day.		18	"	
28	6126	Metritis and subinvolution	104	11	99	3	5	117	8	66	1	51			11	"	
29	6145	Septicæmia	103 1/2	3	99	4	4 1/2	101	5	68	3	33	One chill on 2d day.	Flow of milk	8	"	
30	6150	Galactorrhœa	101 1/2	6	98 3/5	19	3	98	6	58	2	40		Limitation	20	"	
31	6161	Pyæmia	108 1/5	17	98	1	10 1/5	160	17	62	1	98	Recurrent chills	Death	17	"	
32	6175	Normal convalescence	100 1/5	10	97 3/5	2	2 4/5	96	11	64	4	32			13	"	
33	6178	Normal convalescence	100 2/5	10	98	3	2 2/5	96	2	58	7	48			10	"	
34	6180	Pyæmic mammary abscess	104 4/5	18	98 2/5	43	6 2/5	146	18	65	1	81	Recurrent chills	Suppuration	50	"	
35	6183	Pyæmic endometritis	103 4/5	8	98 3/5	15	5 1/5	120	8	72	12	48	Two on 8th day	By lochial discharge	16	"	
36	6185	Septicæmia	102 3/5	4	98 1/5	15	4 3/5	109	4	70	9	39		Elimination	17	"	
37	6228	Septicæmia	102 3/5	4	98	1	4 3/5	106	30	72	28	34	On 4th, 5th & 6th dys.	Mammary abscesses	30	"	
38	6230	Pyæmia	105 4/5	10	98	1	7 4/5	128	24	62	4	64	Recurrent chills	Mammary abscesses	28	"	
39	6239	Septic pyæmic endometritis	103 2/5	5	98 1/2	26	5	122	5	73	31	49	Chilliness all 5th day.	Elimination	32	"	
40	6309	Pyæmic mammitis	103 4/5	13	98 1/5	15	5 3/5	112	13	58	9	54		Resolution	16	"	
41	6318	Septicæmia	103	2	99 1/2	3	3 1/2	120	2	80	1	40		Free flow of milk	9	"	
42	6320	Septicæmia	102 3/5	5	98 1/2	9	4 1/5	120	3	70	9	50		Elimination	9	"	
43	6321	Septicæmia	104	6	97	3	7	112	6	56	2	56		Elimination	9	"	
44	6322	Septic pyæmia	105 1/2	9	98	13	7 1/2	145	2	80	12	65		Diarrhœa	12	"	
45	6323	Septicæmia	103	3	98	1	5	102	3	68	7	34		Colliquative sweats	11	"	
46	6324	Septic pyæmia	104 4/5	3	97 3/5	17	7 2/5	110	2	51	17	59	Recurrent chills	Colliquative sweats	17	"	
47	6325	Puerperal rheumatism	104	7	98 1/2	13	5 1/2	112	5	60	12	52	Recurrent chills	Critical sweats	13	"	
48	6326	Puerperal phlebitis	121 1/2	8	98 3/5	11	3	85	5	50	12	35			13	"	
49	6327	Normal convalescence	100 4/5	8	98 3/5	3	2 1/5	84	8	56	2	28			9	"	
50	6371	Normal convalescence	104 3/5	5	98 2/5	3	5	120	5	76	4	44			10	"	

CASE 3002.—A primipara, was delivered at eight and a half months. On the first morning the temperature was 101$\frac{3}{5}$°, but afterwards did not exceed 100°. On the morning of the seventh day it dropped to 97°, but reached to 99$\frac{4}{5}$° at evening. The pulse varied from 70 to 92.

CASE 3003.—Primipara; had a tedious, and finally a forceps delivery. Previous health poor; anæmia, frequent aphonia, cough, and looked as if she had uræmia. I had the urine tested, but found no albumen. Her child was still-born, but she nursed another one regularly. Eight hours after labor the temperature was only 97$\frac{2}{5}$°, but by evening it reached 101°. Within the next twenty-four hours it began a gradual descent, with proper diurnal variations, which afterwards excluded the possibility of fever, or of any local lesion; and although she had been subject to pectoral trouble, the pulse-curve corresponded quite closely with that of the temperature, running from 100 on the evening of the first to 65 on that of the eighth day.

CASE 5039.—Primipara. Forceps delivery at 2 A.M. At 8 A.M. the temperature was 101°. It declined gradually until the evening of the fourth day, when it reached to the same figure, and then fell again to 99°. The thermic record was kept until the twenty-fifth day, but from the eighth day forward does not note a variation of a single degree. The pulse, however, cut some fantastic capers, touching meanwhile almost every point between 60 and 140.

CASE 6175.—Multipara, eighth child. Profuse post-partum hæmorrhage, on account of which the temperature fell two degrees from the first evening to the morning of the second day. By the evening it rose again to 99$\frac{1}{2}$°, and afterwards did not vary a single degree. The pulse, which was 75 at the outset, dropped to 65 on the morning of the fourth day, and then, on the morning of the eleventh day, rose to 96.

CASE 6178.—Multipara, fourth labor. Lochia on the seventh day still bloody, and the pulse 58. No other signs of endometritis. After the second day, the pulse-line was always below the heat-line. After that time, also, the temperature did not vary half a degree from 100°.

CASE 6327.—Second labor. Complained of sharp, cutting

pains in the uterine region on the afternoon of the second and third days. The diagnosis excluded the septic infection, because of the lack of the church-spire curves in the heat-line, and of the limited range of the latter, which was only two degrees. That there was no peritonitis is also proven by the absence of a chill, and by the low range of the pulse, from 56 to 84.

CASE 2100.—Primipara, nineteen years old. Severe after-pains, and paroxysms of sharp pain in the left side of the forehead and face. The milk came on the second day, when the temperature mounted two and a half degrees, or from 98° to 100½°. After this it hovered between 99° and 100°. The lochia were temporarily arrested on the evening of the second day, and again on the morning of the fifth day. This condition alternated with the headache, but had no influence on the thermic record. The pulse varied from 75 to 95.

CASE 6371.—Primipara, aged twenty-one; presentation of the funis; child still-born; forceps; duration of labor nine and a quarter hours. The temperature did not exceed 100½° until the morning of the fifth day, when it began to rise, and by the evening had passed from 100⅘° to 104½°. The next morning it dropped to 100⅜°. By the sixth evening it had reacted to 102½°, after which it became nearly normal, and she did well. The pulse-curve corresponded very closely, its greatest variation being from 76 to 120.

CASE 2235.—Aged eighteen; had an easy labor of three and a half hours. The temperature reached 101° but once, which was on the evening of the fourth day. But the pulse varied greatly, its curves being acute and frequent, its range from 65 to 100.

CASE 4015.—Aged twenty-three, primipara. Rapid labor, and severe after-pains. The temperature for the first twelve days, when she was discharged, was 98° to 100°. The pulse from 60 to 100, its curves being very curious and suggestive.

II. ABNORMAL CONVALESCENCE.

THE SEPTIC PERIOD.

The septic period extends from delivery to the eighth or ninth day. While it lasts, there is a liability to the absorption of pu-

trid matters caused by the decomposition of the lochia, blood-clots, etc., through the lacerations of the utero-vaginal mucous membrane.

The proportion of cases in which septicæmia is a factor of disease is much larger in this list than it would have been in civil practice, where the figures, as compared with the normal convalescence, would have been reversed. The reasons include the mental and physical conditions of the patient, and the lack of preparation for childbirth, already spoken of, and certain other contingencies that pertain in greater or less degree to every lying-in ward. For with the most thorough ventilation and disinfection, cleanliness of the bed and of the apartment, as well as of the instruments used, good food and water, plenty of direct sunlight, remoteness from the medical and surgical wards, and every hygienic precaution, we cannot prevent a trace of the hospitalism of which Cruveilhier and Sir James Simpson wrote so eloquently and so effectually.

A peculiar risk of septic infection comes from the drill of our students in the obstetrical clinic, for every one of these puerperal women has been examined during her labor, and her case studied by a clinical class of six pupils. Those students who happen to be engaged in the dissecting-room are not allowed in the lying-in ward, but must wait until another time. And all who make a digital examination, or who touch these patients, are required to wash their hands thoroughly, and to lubricate them with carbolized cosmoline.

The proportion of forceps cases is also increased, first, because there are so many primiparæ, and, secondly, because we must, when we can do so with safety, turn these charity cases to account for the benefit of those who are so soon to practice midwifery. The instruments, however, are always applied by the professor who has charge of the clinic, and not by the pupils.

Despite these unavoidable causes of puerperal disease, the history of which constitutes an essential part of this report, *only one of our cases* (No. 2809) *has died from septic infection, whether complicated with inflammation or not.*

a. Puerperal Septicæmia.

CASE 2807 illustrates what is vulgarly styled "milk fever." The patient, a multipara, aged twenty-eight, had a chill with the coming of the milk on the fourth day. At evening the temperature had increased from 98½° to 101½°. The next morning it was 99½°; at evening 102°; and then, for two days more, with evening exacerbations, it reached 101⅖°. On the evening of the eighth day it was 101°, but soon dropped to 99°. The pulse behaved very well, ranging from 80 to 100.

CASE 4002.—Primipara, aged twenty-one. At the close of the second day the temperature was 102⅗°. The next morning it was 99°, or nearly four degrees lower. On the evening of the fifth day it again reached 102⅗°, after which it declined properly and progressively to the ninth day. The pulse ranged from 72 to 102.

CASE 6318.—Primipara, aged eighteen. Sixteen hours in labor. Slight hæmorrhage. On the first morning the heat-line was at 100°; the second evening 103°. It soon dropped, and she did well afterwards. No chill. The pulse was from 80 to 120 before the third day, but later was quite normal.

CASE 6320.—Primipara, aged nineteen. Duration of labor, seventeen hours; forceps. The highest thermic range was from the evening of the second to that of the sixth day; the highest figure 102⅗°. No chill. The pulse ran from 112 to 120 on the third day, after which it dropped below the heat-line, and reached 70 on the seventh day.

CASE 6323.—Severe after-pains and headache, with a very free perspiration. On the third day she had sharp pains, commencing in the region of the hips, and shooting down both limbs. Then the lochia ceased, but was restored again the next morning, with relief from the headache. The flow was suppressed again the same night, but was restored the next evening, when it became quite free. On the third evening the temperature was 103°, but a copious flow of milk brought it down to the normal point on the fifth day. The pulse ran from 69 to 102, but the defervescence caused it to drop to 68.

CASE 3004.—Primipara, aged eighteen, entered hospital hav-

ing already been two hours in labor. Forceps; no hæmorrhage. Diurnal variation of the temperature maintained throughout; the highest figure, 102$\frac{2}{5}$°, on the evening of the second day; the next highest, 102°, on that of the sixth day. Pulse 76 to 95, and finally 60. At the fifth day she had marked symptoms of pleurisy, which were relieved by Bryonia.[3]

CASE 2809.—Primipara, aged forty. Forceps, after a very tedious and severe labor of thirty-six hours. Retention of urine, sleeplessness, pale skin, profuse perspiration, vomiting, tympanitis, and death on the fifth day.

From the morning of the first day, when the temperature was 99$\frac{2}{5}$°, it ascended (with a decline of one degree, on the morning of the fourth day) to 104°, on the morning of the fifth day. The pulse ranged from 70 to 160. This patient was in a private room of the hospital, and had the best of care.

CASE 6145.—Primipara, aged twenty-two, came into the hospital in labor, at 9.30 A.M., and was delivered with forceps at 3 P.M. Thirsty, skin dry and hot. Two church-spire curves in the thermic line, the first on the evening of the second day (102$\frac{3}{5}$°), the other on the evening of the fifth day (103$\frac{1}{2}$°). In the first half of the record the pulse-curve is the reverse of the former; but later it follows it, with a fluctuation of from 68 to 101.

CASE 6185.—Canadian, multipara, entered after having already been one day in labor; forceps; hæmorrhage. Second day, after-pains; third day, breasts full and painful, lochia quite free and bloody, with fugitive abdominal pains. On the morning of the fourth day she had a hæmorrhage. In the evening, when the milk came, the temperature was 102$\frac{3}{5}$°, and the pulse 109. The free flow of milk caused a defervescence, and the heat-curve hovered about 100° for the next ten days. From the eighth day the pulse was highest at morning and lowest at night, with a variation of 30 to 40 beats.

CASE 6228.—Primipara, in labor from 3 A.M. to 7 P.M.; forceps; slight hæmorrhage. Chill of one hour's duration on the morning of the fourth day. The axillary glands are very much swollen and the breasts also, the latter being heavy and painful. The evening temperature on the fourth day was 102$\frac{3}{5}$°.

The milk was delayed until the afternoon of the fifth day, after she had been chilly for some hours. The temperature did not exceed 101⅘° from that time forward, and yet she had four superficial abscesses or boils upon the breasts. The pulse was decidedly abnormal and irregular, varying from 74 to 106.

CASE 6321.—Irish, aged twenty-three, nine hours in labor. On the morning of the third day the temperature had dropped from 99° to 97°, but it reached the same evening to 101°. By the next evening it reached 103°, and on the sixth morning 104°. The pulse followed the same curve, with a latitude of 56 to 112. She made a good recovery.

b. Septic Inflammations.

CASE 2099.—*Septic Peritonitis.* Patient aged twenty-nine; five hours' labor; forceps. In the evening of the second day the temperature sprang from 98½° to 104°. On the evening of the fifth day it had fallen three degrees; then it reached to 102°. The effusion occurred on the seventh day, when the heat-line dropped to 99°. On the evening of the twelfth day it reacted temporarily to 101⅘°. The pulse-curve remained above the heat-line until the evening of the tenth day, when it fell to 80. Then it reacted and kept the same position until the evening of the fourteenth day. It is also remarkable that the pulse, which was 109 at the outset, rapidly rose to 145 on the evening of the second day. The total variation of the pulse was from 80 to 145, 65 beats. She also recovered.

CASE 2275.—*Septic Endometritis.* Aged eighteen; breech presentation; an eight-pound child, still-born. The temperature made a steady ascent from 100⅗° to its acme on the second evening at 105⅘°. In twenty-four hours it had fallen to 104°, and on the morning of the fourth day it stood at 101½°. Thenceforward the curve was very acute, with a daily fluctuation of three degrees or more. It did not remain below 102° until after the eleventh day. In the first twenty-four hours the pulse increased from 110 to 140. It kept its place above the heat-line, and above 115, until the twelfth day. The incidental symptoms and the whole clinical history of this case show it to have been

one of real endometritis. She got well and continued to nurse her child.

CASE 2791.—*Septic Metritis.* Aged twenty-one; American, primipara; had always been a martyr to dysmenorrhœa, and had been four days in active labor, with the result of but a partial dilatation of the os uteri. Professor Leavitt had faithfully tried the various remedies for rigidity of the cervix. I delivered this woman with the forceps passed within the cervix and above the superior strait, October 15th, 1877, in the presence of Obstetrical Class No. 2. The child was alive. The soft parts were not torn, and the patient reacted well. In twelve hours from the first evening the heat-curve rose fully six degrees, or from 98½° to 104½°. Then it dropped one and a half degrees, and on the evening of the third day came up again to 106°, whence it declined, with daily exacerbations, to the evening of the seventh day. Then it came down quite rapidly until, on the morning of the ninth day, it stood at 97°. The pulse-line was above the other but once, and that was on the evening of the second day, when it reached 120. Its greatest variation was from 64 to 120. Recovered.

CASE 525.—*Septic Peritonitis.* Primipara, aged twenty. From the second to the third evening the heat-line rose from 102° to 104°. On the morning of the seventh day it had dropped to 100°, but it was not until the stage of effusion was pronounced (on the ninth day) that it came down decidedly and permanently. Then it fell four and a half degrees, or from 103½° to 99°. In the first thirty-six hours the pulse ran from 120 to 140, and down again. It kept above the heat-line until the morning of the ninth day, when the position of the two curves was reversed. Cured.

CASE 5005.—*Septic Ovarian Peritonitis.* Patient aged nineteen; primipara; ten hours in labor; forceps at the superior strait. Had a chill directly after labor. From the third morning to the fifth evening the temperature rose steadily from 99⅗° to 104⅗°. On the morning of the eighth day it had descended to 99⅘°, but the next morning it stood at 104⅗°. The effusion occurred on the evening of the eleventh day, when the temperature fell from 102⅘° to 98½°, or about four degrees. From the

morning of the first to the evening of the fourth day the pulse had changed from 64 to 125. After the effusion the pulse-line dropped below the heat-line and remained there. Cured.

THE PYÆMIC PERIOD.

The pyæmic period dates from the eighth day. There are seven cases of pyæmia on our list, two of which were simple and five were complicated with inflammation. In Case 6180 the first signs of purulent infection were shown on the thirteenth day, while in Cases 5555 and 6050 they did not appear until the sixteenth day. As will be seen by the record, the very tedious and difficult labors were not more frequently followed by pyæmia, or by pyæmic inflammation, than such as were more rapid and natural. Out of four cases in which the forceps were applied above the pelvic brim, not one had pyæmia.

I am satisfied that the local use of Calendula for the cure of rents and lacerations of the fourchette and soft parts, in primiparæ especially, has saved us much trouble by causing these wounds to heal by the first intention. Indeed, in my judgment, Calendula is the best prophylactic of puerperal pyæmia. Case 6230 certainly owes her life to the topical use of this remedy.

a. Puerperal Pyæmia.

CASE 6161.—Colored; primipara; duration of labor twelve hours; forceps; no accident, neither any hæmorrhage. Had a chill on the second day, and recurrent chills throughout the course of her illness. Had had a chronic cough, and for a week complained of dyspnœa, with pain in the left chest, below the apex of the heart, with symptoms of a threatening pneumonia. These symptoms soon passed, and were followed by signs of peritonitis, which also was of limited duration, and merged into profound pyæmia. The case should more properly have been classed as septic pyæmia. During the second day the temperature mounted rapidly from 98½° to 105⅘°. It descended to 102° only once until the morning of the twelfth day, when it reached 100°. Then it reacted five degrees, came down again to 103° and finally ran up again to 108⅕° at the time of her death, on the

evening of the seventeenth day. The pulse varied from 62 to 136, and finally reached 160.

CASE 6230.—Aged twenty-two; multipara; had a very rapid labor. Milk came on the third day without any sign of supranormal temperature. The first chill came on the evening of the seventh day; had another on the eighth day, tenth day ditto, and several more without any regularity farther on. From the morning to the evening of the seventh day the heat-line rose from 98½° to 103°; it continued to ascend, so that in twenty-four hours more it had reached 105°. On the twelfth, thirteenth, and fourteenth days there were so many acute curves with a downward tendency every morning. The maximum temperature, 105⅘°, followed the chill on the evening of the tenth day.

On the morning of the sixteenth day the temperature rose from 100° to 104⅕° by the evening. In twenty-four hours it had dropped to 100⅕°; then it remained at and below 102°, because of the use of the Calendula tincture with very warm water as a vaginal injection. On the twenty-third day it stood at 104°, and there was no doubt about the formation of an abscess in the right breast. After this abscess was lanced it reached 99°, and she recovered rapidly. With two very brief exceptions the pulse-line was below the heat-line until the abscess had ripened. It varied from 62 on the fourth day to 128 on the twenty-fourth day.

b. Pyæmic Inflammations.

CASE 5555.—*Pyæmic Ovaritis.* This woman's labor was natural, but tardy. She was delivered by the forceps, and did well until the sixteenth day. Then the temperature shot up three degrees, from 99½° to 102⅖°. After dropping two-fifths of a degree, it ran up again to 104½°. From this point it descended in twelve hours to 98⅘°, or a jump of five and a half degrees. In two days more it reacted temporarily to 102°. With this change in the thermic-curve, at the sixteenth day came the symptoms of puerperal ovaritis of the right side. The pulse was habitually low. Its line shows three acute curves; one on the seventh, another on the fourteenth, and a third on the seventeenth days. At these periods it rose from 70 to 100; from 72

to 104, when it dropped to 66; and from 78 to 112. On the day of her discharge it was 67.

CASE 6050.—*Pyæmic Mammitis* Age of patient thirty years; primipara; natural labor. Mammitis of the left breast developed from the sixteenth day. Redness in streaks from the nipple, bruised, sore feeling over the whole body, some headache, with sweats on the legs at night. The mammitis was controlled and resolution promoted by the local use of Phytolacca and the internal administration of Bryonia[3]. The heat-line was almost uniformly between 99° and 101° until the morning of the sixteenth day, when it mounted from 98$\frac{4}{5}$° to 102$\frac{1}{2}$° in the evening. This change corresponded exactly with the local signs of glandular inflammation. In twenty-four hours the temperature had fallen to 99°, and the local symptoms had vanished without going on to suppuration. The pulse began at 90, and varied, with acute curves, from 79 to 104.

CASE 6309.—*Pyæmic Mammitis* in a multipara. The labor was natural, of three hours' duration, with severe after-pains and retention of the urine. The chart shows that for twelve days from her delivery the temperature did not vary more than a degree. But on the evening of the twelfth day it began to rise, and in the morning of the thirteenth had passed from 98$\frac{4}{5}$° to 103$\frac{2}{5}$°, or four and three-fifths degrees. At evening of the thirteenth day it indicated 103$\frac{4}{5}$°, but in the next twelve hours fell to 101$\frac{1}{5}$°. From the evening of the fourteenth day to the morning of the fifteenth day it fell from 103$\frac{3}{5}$° to 98$\frac{1}{5}$°, or five and two-fifths degrees. This abrupt and perpendicular rise in the temperature corresponded with the local signs of a violent inflammation in the left breast, for which Belladonna was given, with the result of aborting the suppurative process. The pulse was low from the first, running down at one time to 58; but with the advent of the inflammation it arose in twelve hours from 74 to 112. When the inflammation had subsided it came down again to 66.

CASE 6180.—*Pyæmic Submammary Abscess.* Primipara, aged twenty-two; in labor twelve hours; forceps; severe after-pains. The milk appeared on the fourth day. The milk became very free, but the urine was scanty although normal, and had to

be drawn by the catheter. Tenderness in region of the bladder, offensive lochia, and local heat in the hypogastrium. At this time the temperature, which had been below 101°, rose to 104°, whence it descended directly to 101° again. From the morning to the evening of the thirteenth day the heat-curve rose from $100\frac{2}{5}$° to $104\frac{2}{5}$°, or four and two-fifths degrees. With this there was profuse sweating of the lower extremities; general skin hot and moist; her mental state was as if she were under the influence of an anæsthetic, almost comatose. She also had for the first time a deepseated pain in the axillary margin of the left breast, which was temporarily relieved by nursing. The heat-line dropped but once below 101°, until, on the eighteenth day, it was $104\frac{4}{5}$° again. From the eighteenth to the twenty-eighth day the temperature had daily variations between 101° and 104°; the abscess forming and pushing its way to the surface of the gland meanwhile. On the twenty-ninth day Dr. Dunn, the house physician, lanced it freely, and it discharged more than half a pint of thick yellow pus. The temperature dropped to $100\frac{3}{5}$°.

One week later, on the thirty-sixth day, a small abscess had formed in the right breast. This brought the temperature up again, and the line reached $102\frac{3}{5}$°. Lancing the abscess lowered it directly to $98\frac{4}{5}$°. On the thirty-ninth day she had a sharp attack of menorrhagia, for which she took China[3] with good effect.

The pulse skipped from 65 to 146, being habitually below the heat-line except when the temperature was the highest. From the thirteenth to the twenty-eighth day (while the large abscess was forming) its curve was always above the thermic line. From the morning to the evening of the eighteenth day it rose from 94 to 146.

CASE 6183.—*Pyæmic Endometritis.* Primipara, age twenty-one; German; forceps case; twelve hours in labor. The milk came on the third day without any rise of temperature. From the morning of the seventh day to that of the eighth there was a steady rise of two degrees; in the next twenty-four hours the heat-line had made an acute church-spire curve, touching at $103\frac{4}{5}$°. Then it dropped gradually, with proper diurnal variations, reaching the normal point on the evening of the fifteenth

day. There was a profuse flow of milk, and she was taciturn, stupid and non-committal. On the eighth day she had a decided uterine hæmorrhage, which continued to recur for several days. All the local symptoms were indicative of endometritis. The pulse ran from 72 to 120, being thready and filiform after the hæmorrhage.

SEPTIC PYÆMIA.

There were six cases in which septicæmia and pyæmia coexisted. In three of them there were no signs of any local lesion; the remainder were accompanied by inflammation. It is a serious question whether those cases of puerperal septicæmia which are allowed to progress to the eighth day, do not almost invariably tend to assume the pyæmic form, and thereby to become very dangerous. Our cases all recovered.

CASE 6322.—Primipara, aged nineteen; in labor twelve hours; forceps; much pain and debility from copious hæmorrhage. From the first to the third evening the temperature rose steadily from 100° to 104°. Then it declined slowly to 101°, remained there for two days when, from the evening of the eighth day to the morning of the ninth, it ran up from 101° to 105½°, or four and a half degrees in twelve hours. From the evening of the ninth to the morning of the tenth day it dropped from 105½° to 100½°, or five full degrees. The same evening it reacted to 104½°, made a church-spire curve, and on the morning of the eleventh day came down to 100°.

At first the pulse was 120. It arose on the evening of the second day to 145, and fell the next morning to 130, reacted to 140 in the evening, came down to 130 on the morning of the fourth day; on the fifth it was 120 in the morning and 130 in the evening; it declined properly until the pyæmia set in. On the ninth day, when the temperature was highest (105½°), the pulse had dropped to its lowest figure (90), from which it rose again on the morning of the eleventh day to 120.

CASE 6324.—Aged twenty-two; German; primipara; duration of labor very indefinite. Had a chill on the eighth day and on the fifteenth also. From the morning of the first to the evening of the second day the heat-line made a steady ascent from 99⅘° to 104½°. Then it declined to 102⅘° on the morning of the

third day, but reacted at evening to 104⅘. After this, with regular diurnal variations and acute curves, it came down on the morning of the seventh day to 99⅘°. The pyæmic period was ushered in by chills during the eighth day, when the temperature mounted again to 104⅖°. On the morning of the twelfth day it had dropped to 98°, but soon reacted. (By some unaccountable accident the thermometric record for the next three days was lost.) On the evening of the fifteenth day, however, after another chill, the temperature became 104⅘°, from which it declined to 97⅖° on the seventeenth day.

The pulse-curve was invariably below the heat-line to the seventeenth day, when it dropped to 51; it varied from 65 to 110.

CASE 1276.—Primipara; natural labor. Septicæmia quite pronounced, and later the pyæmia was equally so. Here we have the same steady ascent of the heat-line from the evening of the first to that of the second day, without any deviation in the morning, 99° to 103½°. (I know of no more suspicious sign of this septic pyæmia.) On the third morning it had dropped to 101°, but from the evening of the fourth to that of the twelfth day it was only twice, and temporarily, below 102°. On the evening of the tenth day it reached 105°.

From the evening of the first to that of the second day the pulse rose from 72 to 120, and afterwards fluctuated between 95 and 115. The case came to a crisis with a large mammary abscess.

Septic Pyæmic Inflammations.

CASE 6239.—*Septic Pyæmic Endometritis.* Primipara; eight hours' labor; forceps; an hour after delivery there was a copious hæmorrhage. The lochia was more free than usual, with a discharge of small clots and repeated attacks of a slight hæmorrhage, the uterine fundus being higher toward the umbilicus than usual. The lochia became very offensive, stinking, and finally copious and purulent. The first chill came on the fifth day, when in twenty-four hours the temperature rose from 98⅘° to 103⅖°, or five degrees. From the eighth day it was rarely above 101°. All the local signs of endometritis were present.

Until the fifteenth day the pulse, as is usual in endometritis (at least in my experience), was above the temperature; but from that date the heat-line was uppermost. The pulse variation was from 72 to 122, the highest curve being on the morning of the fifth day.

CASE 3005.—*Septic Pyæmic Endometritis.* Primipara, French, in labor only two and a half hours, delivery unaided, slight post-partum hæmorrhage. The lochia began to be offensive on the third day. Afterwards it became suppressed for a time, then became dark brown and scanty. The urine was retained for many days, and had to be drawn with a catheter on account of the pain in the womb whenever she tried to urinate. All the usual symptoms of endometritis were developed by the sixth day.

At the third and fourth days there was the usual increase of temperature, and the curve reached $102\frac{1}{5}°$; but in twenty-four hours from the evening of the fifth day it ran directly up from $99\frac{2}{5}°$ to $104\frac{2}{5}°$, or five degrees. It made a sharp curve, and on the morning of the seventh day had dropped to $102\frac{4}{5}°$; but the same evening it reached again to $105\frac{4}{5}°$. On the evening of the ninth day it was $106\frac{1}{5}°$, and twenty-four hours later 106°. In two days, without any diurnal variation, it dropped again from 106° to $97\frac{2}{5}°$. For the next four days it was below 99°, but, from the evening of the sixteenth to the morning of the seventeenth day it ran suddenly from 98° to 102°, or four degrees in twelve hours. By the evening it ascended two-fifths of a degree, and then it dropped steadily, without any deviation, from $102\frac{2}{5}°$ to 98°. It reacted again on the morning of the twenty-first day to $102\frac{2}{5}°$, and subsequently hovered about 101°.

The pulse was pretty regularly with the heat-curve until after the twelfth day, when, with a single exception (in which it ran suddenly from 70 to 125 between the evening and the morning), it remained below the heat-line until the twenty-third day. The total variation of the pulse was from 66 to 126.

This was the sickest woman on the list, and yet she had the easiest and most natural labor of them all. She convalesced very slowly.

CASE 2174.—*Septic Pyæmic Lymphangitis.* Primipara, aged

twenty-three; natural labor. The temperature was at and below 100° until the morning of the fifth day, when it rose rapidly and marked 103⅘° at evening. There were three of these high spires made by the heat-curve. The one just noted reached its altitude on the evening of the fifth day (103⅘°); the second on the morning of the eighth day (105°); the third on the evening of the fourteenth day (103⅕°).

The pulse made three corresponding curves, varying from 62 to 115.

This was an unmistakable case of lymphangitis, as shown by the active local symptoms and the sequelæ of the attack. She made a good recovery.

MISCELLANEOUS.

CASE 2974.—*Puerperal Chorea.* Primipara, aged seventeen; had had chorea from the second month of gestation. Entered the hospital December 12th, 1877, and was delivered February 8th, 1878. When she came into the ward the spasms and convulsions were so severe that she would roll out of the bed upon the floor, and bruise and bang herself about. She could not articulate plainly, nor walk, nor sit in a chair without being held. As pregnancy terminated, and under our remedies, with proper care she improved very decidedly, but the involuntary twitchings of all the members still continued.

Her labor began at 8 A.M., and was terminated safely by the forceps at the superior strait at 4 P.M. She had no convulsions before or after delivery. There was some hæmorrhage. For an hour after the child was born the old choreic symptoms returned, with considerable severity, but they gradually disappeared, and when she was discharged, at the end of the fourth week, they had ceased entirely. A curious coincidence was that the baby had the same symptoms, and to such a degree as to interfere with nursing.

The chart shows three distinct crises. In the first of these, on the evening of the fifth day, the heat-line reached 103⅘° In the second, which was on the evening of the eleventh day, it reached 105⅙°; and in the third, which came on the sixteenth and seventeenth days, it was 106°. The daily variations were maintained

throughout. The lowest figure was 97⅜°, on the morning of the twenty-third day.

The pulse-curve was similar to that of the temperature. In the three crises it reached 120, 118 and 120. It came down to 64 on the morning of the fourteenth day. It ranged between 60 and 120.

CASE 4005.—*Puerperal Mammitis.* Patient aged twenty-one; primipara; forceps case, no bad results. The temperature did not exceed 101° until the twenty-seventh day, when she had a chill, and it ran up suddenly to 104°. It came down with a sharp church-spire curve to 98½°, and the mammitis passed without suppuration.

With one brief and trifling exception the pulse was below 100 until the same date, when it increased from 90 to 120, and then dropped back again abruptly to 84.

CASE 4027.—*Puerperal Rheumatism.* Age, thirty-eight; multipara; forceps; severe after-pains, nervous chills and free perspiration. The rheumatic pains were developed on the third day and continued more or less severe until her discharge. They were located in the left shoulder and beneath the left scapula, in the head and in the lower extremities.

The heat-line hovered about 100°, not reaching 101° nor descending to 98° The pulse ranged from 60 to 96. Its line made an acute curve on the morning of the twelfth day, when it ran from 70 to 96.

CASE 6061.—*Puerperal Hysteria.* Aged twenty-two; English; third labor; delivered in about six hours; no hæmorrhage; after-pains very severe, and mingled with decided symptoms of hysteria. On the sixth day the lochia were scanty and offensive. Hysterical spasms, which were frequently repeated. They begin with sighing; turns her face to the right, and with open mouth catches and holds the breath. Between the fits she gnashes her teeth so that the temperature cannot be taken by the mouth. Retention of urine; complains of a lump behind the sternum, which, she says, comes and goes with the fugitive neuralgic pains in the head and elsewhere.

The thermic chart is full of acute curves, which began on the morning of the third day, when the temperature rose from 99½°

to 104°. The next day it reached 104$\frac{4}{5}$°. On the evening of the eighth day it marked 105$\frac{2}{5}$°, and on the evening of the sixteenth day 105°. Every time she had a paroxysm the temperature was raised, the heat-line running up from one to three degrees.

The pulse-line followed the heat-curve more closely than in any other case on the list, and ranged from 68 to 121.

CASE 6100.—*Puerperal Metrophlebitis.* Aged twenty-one; American; second labor; head of the child in the fourth position. Chills on the first and sixth days. All the signs of metrophlebitis, with swelling and pains in the legs, retention of urine, etc.

Two hours after the delivery the temperature was 97$\frac{1}{2}$°, but on the morning of the second day it had ran up steadily to 102°. By the same evening it was 102$\frac{1}{2}$°. Then it dropped, with diurnal variations, to 99°, on the morning of the sixth day. After a chill, on the evening of the same day, it ran up again to 102°, or three full degrees. Subsequently it dropped to about 99°, and did not react again.

The first record of the pulse was 59. On the evening of the second day it was 100. This was its highest figure. After the eighth day it fell below 70 and remained there. It came down to 46 on the fourteenth day.

CASE 6126.—*Puerperal Metritis with Subinvolution.* Age 16; German; primipara; duration of labor two hours. The womb did not contract properly; active hæmorrhage, which was not entirely controlled for two hours. On the fourth day decided signs of arrested involution were demonstrated at the clinic. The milk and lochia, which have been free, have diminished. On the seventh day the fundus uteri was as high as the umbilicus, and there were decided symptoms of metritis.

On the evening of the fourth day the temperature was 101°. On the morning of the eighth day, 102$\frac{2}{5}$°; and on the morning of the eleventh day, 104°. (Here the record is unfortunately cut off.) It is worthy of remark that the highest temperature noted in this case is set down for the morning and not for the evening hour.

The pulse-line made three sharp curves; on the second day it

reaches 100; on the fifth, 103; and on the eighth, 117. Its range is 66 to 117.

CASE 6150.—*Galactorrhœa.* Primipara, scrofulous temperament, glandular system largely developed. The milk "came with a rush" on the morning of the fourth day, and continued to be secreted very copiously. The heat-curve took an upward direction to 101½°, but defervescence came with the flow of milk, and from that time forward was controlled by it. The pulse varied from 58 to 98, being, for the most part, nearly or quite normal.

CASE 3081.—*Puerperal Mania.* This patient, a primipara, was admitted to a private room in the hospital when her babe was seven days' old. She was suffering from mania induced by fright. She had not slept for five nights, was very wretched, taciturn, and afraid of death. Dr. Roberts, the House Physician, prescribed Aconite, to be taken every half hour. After a few doses, at ten P.M., she fell asleep quietly, and rested as sweetly as any one until 5 A.M. The whole history of the case is carefully recorded.

She remained in the hospital twenty-five days, with alternate improvement and relapse, but left it in good health. Nothing could exceed the satisfaction with which, by means of the thermometer, we decided from day to day that her mental disorder had no basis in a local inflammation. The thermic curve did not vary two degrees during the whole period of twenty-five days. The pulse made one sharp curve at the tenth day, running from 75 to 96. Its frequency increased steadily as she convalesced.

CASE 6325.—*Puerperal Rheumatism.* Aged 20; Irish; primipara; in labor twelve hours; delivery natural. Rheumatic pains all over the body, but especially in the left shoulder and along the outer margin of the deltoid muscle and in the back and head. From the fourth day she had frequent chills and chilly feelings. Part of the time the urine was retained.

On the second day, from morning to evening, the heat-curve ran up from 98½° to 104°, or five and a half degrees. The next morning it still stood at 104°, but on the morning of the fourth day it had dropped to 99⅘°. On the evening of the fourth day

it had reacted to 103°, where it remained until the next morning, and then fell below 100°. There was another rise on the twelfth and thirteenth days, but it did not reach 102°.

The pulse began at 109, and by the evening of the second day reached 145. Thence it descended by easy gradations to 80 on the evening of the tenth day. Later it reacted with the heat-line, and reached 110. For three days from the fifteenth the pulse stood at 100 without change.

CASE 6326.—*Puerperal Metrophlebitis.* Swede; primipara; aged 18; was delivered at 9.30 A.M., after three days and two nights' labor. This was a case in which there could be no mistake about the diagnosis.

The temperature, which was 100⅔° the first evening, reached its acme on the evening of the eighth day (101⅔°.) The thermic curve throughout was negative, especially when considered by itself. But when studied with the pulse the case was very different. For the pulse, which was 80 on the first evening, dropped to 56 on the morning of the fourth day. In twenty-four hours more it reached its highest figure (85), and then dropped very characteristically and persistently. More than half the time it was below 70, and once reached as low as 50.

CASE 5025. *Spurious Peritonitis.* American; primipara; aged 16; natural labor. The subjective symptoms of peritonitis were very marked at times, and then subsided and disappeared suddenly. The record shows that, in this regard, the diagnosis could not have been made so satisfactorily without the aid of the thermometer, and the comparison of its curve with that of the pulse.

The highest thermic point reached was 101°, and this was on the evening of the sixth and of the eleventh days respectively. Three-fourths of the time the heat-line was between 99° and 100°. Until the evening of the sixth day the pulse-line was not above the heat-line. Then it only remained there for thirty-six hours, when it took its former position. On the eleventh and the fourteenth days it came above the other line again, but slightly, and only for a few hours. Throughout the case the highest pulse recorded was 100, and the lowest 64.

CONCLUSIONS.

The following propositions embody the results of my observations in puerperal thermometry, both in hospital and in private practice:

1. Unless they are properly interpreted, the clinical inferences drawn from the use of the thermometer in lying-in cases will be very apt to lead us to wrong conclusions.

2. The proper thermic analysis of a puerperal case includes two points (*a*), a study of the up and down curves, as shown in the chart, and (*b*) the careful comparison of the heat-line with that of the pulse.

3. The *ascending* curve, as shown by the thermometer, is chiefly interesting (*a*) from its connection with the daily variations of the temperature, as indicated by the natural rising thereof from morning to evening, and (*b*) from its peculiar relation to the exciting cause and nature of the disease, whatever they may have been.

4. The *descending* curve is significant in (*a*) diagnosis, (*b*) prognosis, (*c*) treatment. This curve holds about the same relation to the ascending curve that the down-stroke of the pen does to the up-stroke in writing. For it is this which gives the chief clinical expression to the record of a case by the thermometer.

5. For the proper study of the thermic record, and also for that of the pulse, it is absolutely indispensable that the curves should be drawn upon a chart, and not merely written or printed in a column of figures.

6. Nature has so many means of defervescence, that, in the case of a cure where the temperature has been high, we should be very careful not to ascribe the result to the wrong cause.

7. Puerperal thermometry should not be detached from other methods of clinical investigation and analysis, but should be used conjointly with them.

APPENDIX.

DISCUSSION.

SECOND DAY—EVENING SESSION.

LEWIS BARNES, M.D., of Delaware, O.: I rise to ask a question. I understand from Dr. Guernsey's paper that he claims the clinical thermometer to be a new and very valuable proof of the truth of the homœopathic law. I wish to know how it proves that law. Mind, I neither deny nor disbelieve, but most firmly trust in it myself; but while I am greatly pleased with these papers, I ask as a simple matter of information for myself and for the benefit of some others, how the clinical thermometer proves that homœopathy is the right kind of treatment or the right system? I can understand that the thermometer very accurately detects the temperature of the person, but cannot see how it does anything further.

It should be fully explained how it proves this. Does it tell us how a disease should be treated, or give us any rule for the selection of remedies?

DR. GUERNSEY: In the first place the temperature must be in unison with the violence of the disease, and it is normal in health. Now we have a case of illness; the thermometer stands at 107°; we prescribe according to the Hahnemannian principle, and cure our cases quickly, and by so doing bring with little variation the temperature very quickly back to its normal standard.

We cure our cases more quickly than by any other plan in the world, and the thermometer marks the rapidity of the cure very accurately. We know these things to be true, and we expect to do this in puerperal and other diseases. Thus armed we hope to show great results.

By thus figuring the matter out we prove our plan of treatment to be the best in the world. By and by we may bring the temperature down from a higher degree than 107°. I simply say this that we may be encouraged to push forward in our new school of investigation.

DR. BARNES: Let me push the question a little further. It does not seem that my question is answered. I do not deny that homœopathy is the best method of treating disease.

I think you can by the thermometer tell the condition of your patient better than by any other way. You can foretell dangerous symptoms.

If that is all the thermometer shows I fail to see how it can prove homœopathy. Suppose I am an allopathist. I take the temperature in the same way, and with the thermometer I will discover the severity of the disease as quickly as my brother homœopath.

Why, as far as the temperature is concerned, may I not treat it as well on the allopathic as on the homœopathic plan?

DR. GUERNSEY: Because we can lower the temperature more surely and quickly with homœopathic medicine.

DR. BARNES: I know that, but I ask how the thermometer proves homœopathy?

DR. GUERNSEY: I did not say that it proved homœopathy. I only said that it proved the principle to be true, because it showed a more rapid decrease of temperature and recovery than under the allopathic system.

DR. T. S. VERDI, of Washington, D. C.: Mr. President, I was much pleased to hear Dr. Barnes ask Dr. Guernsey that question. There is such a thing, even in medicine, as attempting to prove too much. Homœopathy will not do everything. Let us come down to sense, gentlemen. Homœopathy will not prove the sphygmograph, the phonograph, and every other graph, because of its high or low dilution.

When a gentleman brings statistics; when he has made his comparison of the allopathic and homœopathic practices, and has demonstrated thus that the pulse and temperature have been reduced sooner by homœopathic remedies, and that they are not so soon reduced by means of the allopathic methods, then we shall have a real proof.

Our friend Dr. Guernsey proves nothing. It is very well for us to stand here crying, homœopathy! hallelujah! but it is not scientific. Let us bring the figures and cases to prove our assertions, with a fair testimony and analysis. The mere fact of crying hallelujah proves nothing.

The pathetic assertions of Dr. Guernsey that we are better than anybody else in the world, prove nothing, but only makes us ridiculous.

Bring your statistics and cases, and show them like men; prove your assertions. No doubt clinical thermometery is a great stride in the way of diagnosis, that we all admit; but such

assertions cover us with ridicule in the eyes of the scientific world. I hope we shall rise to the demands of science, acting like men, coming here and not only stating but proving our statements. This study is a great stride in medical science, but it will not do for us to go before the world and say that homœopathy lowers the temperature better than any other practice; we must prove it by advancing undeniable facts.

I do not doubt but that homœopathy will do it, but I am not going to blazon it forth until I can show it to be a fact in a scientific manner.

DR. J. G. GILCHRIST, Ann Arbor, Mich.: The gentleman wants evidence to prove that homœopathy is superior, so that we can show it to the world!

DR. BARNES: I did not state that homœopathy was not superior; I asked for evidence that the thermometer proves homœopathy.

DR. GILCHRIST: I think that is shown in these charts. Suppose we have two charts, such as are constantly published, the one showing the curve-line in a case of pneumonia treated homœopathically, the other showing a similar line in a case treated allopathically; and suppose on investigation the homœopathic chart gives the best results in bringing the pulse and temperature to a normal standard, will it not be a proof of the superiority of the homœopathic practice? I think that is all Dr. Guernsey expected to prove, that homœopathy thus showed its superiority.

DR. VERDI: I think our cases should be put side by side with those under allopathic practice.

DR. GUERNSEY: I do not wish to do that.

DR. VERDI: Of course you do not.

DR. C. PEARSON, of Washington, D. C.: Mr. President, I do not understand what the physicians mean by this discussion. There seems to be a spirit of unrest among them. Some of them, like the communists, seem to long for more liberty.

I think they want something outside of the platform of homœopathy; they think that too circumscribed.

What science can be obtained outside that is not equally as true inside of homœopathy? What knowledge do we need but that by which we can cure our patients in the quickest, most certain and safest manner?

THE PRESIDENT: The gentleman must confine himself to the subject under discussion.

DR. PEARSON: If I am not, then others did not confine themselves to the subject. Dr. Guernsey's position was, I think, tena-

ble, and yet it is confuted. Had I more time, I would like to give reasons.

DR. BECKWITH, of Cincinnati: Mr. President, I rise to take a slight exception to Dr. Ludlam's idea of puerperal mania. I must confess to having learned something new to-night, or else my friend is mistaken.

It is the first time I ever heard puerperal cerebritis called puerperal mania. I would refer to the books. In my conception, puerperal mania consists in a reflex action from the uterus and its appendages, and in consequence of this there is simply a maniacal condition, of which no treatment gives a recovery of eighty-five per cent. These patients do not get cerebritis. I never saw a case of cerebritis following confinement but that it died; few recover.

The thermometer, in puerperal mania, is worth just about as much as a goose-quill. I speak from experience, for I have for the last five years had charge in our asylum of maniacal patients, and have noticed that any little excitement, no matter how occasioned, will produce a rise of temperature, and its cessation a corresponding fall.

I value the thermometer. I think we all should use it, especially in typhoid fever; but I would hardly like to have it go out from the Institute that puerperal cerebritis was the same as puerperal mania.

DR. TAYLOR, of Vincennes, Ind.: Mr. President, I take exceptions to some of Dr. Ludlam's medical statements. He says he never reports a case until, five or ten years having elapsed, he is certain about the result. And yet he brings forward the thermometer which it seems he has just discovered. Dr. Guernsey has also just made the same discovery. I would not like the impression to go abroad that the whole Institute are in a condition of ignorance about it, as it is not true.

We have been using the thermometer in our town for eight or ten years, and we know something about it. It is now for the first time presented to this Institute, and some remarkable facts are told which we have known for a long time. Dr. Ludlam waits too long after making a discovery.

Several calls were made for Dr. Ludlam.

DR. R. LUDLAM, of Chicago: I beg your pardon, Mr. President, but I prefer to hear from other members and speak afterwards.

DR. J. P. DAKE, of Nashville, Tenn.: I wish to add to Dr. Guernsey's answer to Dr. Barnes. Sometimes, when we claim to cure by homœopathic means, our allopathic friends deny it, and say our claims are false. They say we simply went by symptoms,

and not by the disease. Now the thermometer comes in as a positive indicator, because our allopathic friends acknowledge, use and understand it. They know that danger increases with its rise, and with its fall there is a return to a normal state.

If, by using homœopathic medicine, we bring the thermometer down more quickly than do the allopaths, and if we can prove this to be true, then our assertions become facts. All we have to do is to show that homœopathy brings the temperature to the normal standard quicker than allopathy. When we can satisfactorily show that, I think they will acknowledge it.

Dr. N. F. Cook, of Chicago: Mr. President, I think there has been a little misapprehension. I do not think Dr. Guernsey meant to assert that the thermometer itself had any influence upon disease, but that its use would prove the truth of the homœopathic law. I feel much interested in Dr. Guernsey's statement that our treatment influences the range of the thermometer to a much greater extent than does the allopathic treatment. If that is the assertion of Dr. Guernsey fairly stated, then Dr. Barnes was too hasty.

Surely I may claim to speak with authority, having used the clinical thermometer for fifteen or sixteen years, studying its range. My friend, Dr. Ludlam, has used it about twelve years, getting the typical range of the temperature in cases of typhoid fever, pneumonia, and pulmonary diseases, but of course not to the systematic, scientific extent described to-night.

If puerperal fever gives any opportunity for observation it is in that regard. My observations here have been somewhat limited.

I intend to use the homœopathic treatment in my cases, and I shall also use the clinical thermometer; and I undertake to say that I can diagnose a case of pulmonary disease, typhoid, or pneumonia, or intermittent fever, by observations made by some one else a thousand miles away, simply by that which the inspection of the daily range of the thermometer,—what Dr. Ludlam calls the daily curve.

I wish to be tested about this. When the bureau of clinical thermometrics is appointed, I would like some of its members to take the daily range of the clinical thermometer in some typical disease, and send me the statement for diagnosis. If I cannot give the correct diagnosis I will stand humiliated before the next session of the Institute.

Dr. J. W. Dowling, of New York: I rise in defence of my friend, Dr. Guernsey, and his assertion that the thermometer to a certain extent proves the homœopathic law. Heretofore we have been quoted by our death-rate. Our friend, Dr. Kellogg, has

spent months and thousands of dollars in learning how many patients died of certain diseases under the homœopathic and allopathic treatments, and he has proven conclusively that many fewer die under our treatment.

He has not proved by these statistics that the course of these diseases was modified. I can bring two cases in point; two cases of typhoid fever which recovered.

In one the temperature commenced to fall on the twenty-first day, and under the influence of Baptisia it had not risen above 103°. The evening temperature had not risen in the course of the disease above 103°, and the patient recovered steadily.

Allopaths would have plunged the patient in a bath from the time the temperature rose to 103°, and reduced it perhaps a couple of degrees.

That was a fatal case in which the temperature did not rise above 103° under the influence of Baptisia. My patient on the twenty-first day was in delirium; on the twenty-fourth day the disease reached its climax, and a bloodvessel ruptured causing death. Now these cases show by the thermometer that we can keep the temperature down, and thus the thermometer is an aid in proving the superiority of our law of cure. That is the idea my friend Dr. Guernsey wished to advance.

Dr. Guernsey: That is true.

Dr. Dowling: In the last case the temperature neither rose nor continued high very long; the patient did not die of the fever; there was not much delirium or fever, and yet on the twenty-fourth day he died of hæmorrhage from the bowels, but the temperature did not rise above 103°.

Dr. A. Korndœrfer, of Philadelphia: In addition to what Dr. Dowling has been saying in corroboration of this view, I had also a case that died. I think Dr. Guernsey's statement, that our charts and tables of temperature prove in the main that homœopathic treatment keeps the temperature below the average temperature in old-school treatment is true. The average of one hundred cases under homœopathic will be lower than the average of one hundred cases under allopathic treatment.

My fatal case died from intestinal perforation. She came under my charge after eight days of allopathic treatment. The temperature was high; purgatives had been freely used. My old-school friend, a physician in high standing, had diagnosed the case as a bilious attack, prescribing Calomel and Citrate of magnesia. I found the temperature 104°; in twelve hours after it was $104\frac{3}{5}$°

I carefully applied the remedies, and in forty-eight hours the temperature descended to 101°. The temperature was taken

four times daily, including morning and evening. It continued at 101°, yet the patient suddenly died.

Here was proof that even with the fatal condition of perforation going on, the proper remedies kept the temperature down to 101°. No post-mortem was allowed, but there is little doubt of the cause of death. The temperature can be lowered by any treatment sometimes, but I did not use the so-called antipyretic treatment.

DR. T. S. VERDI, of Washington: No one disputes the power of homœopathic medicines to cure, or to lower the temperature.

Assuming that the temperature is a diagnostic sign of the condition of the patient, that was not the position of either Dr. Barnes or myself.

The question at issue is the superiority of the means used by homœopathicians.

I should be more delighted than any one present if comparative statistics could be brought to prove that our remedies have reduced the temperature quicker than any other system of medicine. We all acknowledge this, else we should not practice it; but let us not make ourselves ridiculous before we have actual statistics to prove it to be a fact.

DR. WILLARD, of Waukegan, Illinois: This discussion, though interesting, is like the old song of tweedle-dum and tweedle-dee. It is a splitting of hairs. We all believe the same thing and are wasting time.

DR. G. A. HALL, of Chicago: I am interested in this question of the clinical thermometer, though somewhat surprised that the experience of some members dates so far back. I have been practicing for twenty-two years, but must confess to be behind the age. Some of my colleagues have not, I think, been in the habit of using the thermometer until within the past five or six years. I do not remember hearing the subject discussed in any of our societies, nor here until the last meeting of the Institute.

We have here representative men from all the States in the Union, who have used the thermometer for years and years, and it seems singular that we have never learned anything before as to its real use.

I must say that it is with a feeling of pleasure and pride that I refer to the labors of my colleague, who deserves something besides abuse for his efforts to demonstrate the utility of this little instrument.

Nothing has been said of its use in the surgical field. As a surgical aid I have used it for two years past, and it has been of great service in keeping a record of cases in the country, cases

that we sometimes have to trust to inexperienced men of two or three years' practice.

I find that in trusting cases in such hands it is difficult to obtain such a description of the objective and subjective symptoms as to guide me properly. Now if I go into the country and operate, all I desire of my assistants is to telegraph every morning and evening the temperature and pulse. Then I can foretell danger or feel sure that the patient is doing well. I was pleased to hear from Dr. Cooke regarding diagnosis; he has had an extensive experience with the thermometer.

My first introduction to it was in connection with Dr. Ludlam, and about the same time Dr. Cooke gave me his experience, which extended back for a number of years. I have no doubt of his ability to diagnose by means of the thermometric record, even as a geologist determines a stratum by a fragment of stone.

Dr. R. Ludlam, of Chicago: It is a matter of great pleasure to me, as an insignificant member of this committee, that its report has not fallen stillborn. We have had an interesting discussion on our papers. I think the paper should make little noise of itself, but should awaken a great echo from the audience. This we have done. Regarding the thermometer, I feel like a father with a pair of twins.

I brought up this subject two years ago, believing that it was an important one, much neglected by our school; there is nothing in our literature about it previous to the publication of our *Transactions* and of my little paper of a year ago. Dr. Guernsey has set the ball in motion, and we shall see astonishing results.

I believed and am seeing it verified, that we should in the use of the thermometer seek confirmation of the efficacy of homœopathy. I think we should see that the assertions as to homœopathy are based on the statements of truthful men; statements of morning and evening records in hospital practice and in sick-chambers; statements that can be referred to as in evidence of the faithfulness of our work and deductions after we are all dead and gone. Any quack can make a claim, but no quack can make as good charts as I have.

I prophesy that just so soon as we have plenty of testimony, the allopaths will claim that we cure our patients with mercury because we use the thermometer.

Dr. Taylor: I am sure that I would not be doing my duty to the medical profession, did I fail to call attention to this solemn fact.

In Chicago we have medical colleges which are sending out every year into the country an indefinite number of practitioners, and I think that medical missionaries are needed in Chicago.

These gentlemen, by their own admission, have known nothing practically or theoretically about the thermometer until within five or six years. I am astonished, because seven or eight years ago I wrote an article on this subject for the *American Observer* that gained me some applause. I thought all the world knew all about it, and am surprised that the gentlemen who have spoken did not. I would like to be appointed as a missionary to them.

On motion, the discussion was closed.

SECTION XII.

REPORT

OF THE

BUREAU OF PÆDOLOGY,

W. H. JENNY, M.D.,	Kansas City, Mo.
FRANCIS BRICK, M.D.,	Worcester, Mass.
L. E. OBER, M.D.,	La Crosse, Wis.
H. C. ALLEN, M.D.,	Toledo, O.
F. L. DAVIS, M.D.,	Evansville, Ind.
SOPHIA PENFIELD, M.D.,	Danbury, Conn.
T. C. DUNCAN, M.D.,	Chicago.
W. N. GRISWOLD, M.D.,	San Francisco.
L. M. KENYON, M.D.,	Buffalo, N. Y.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 4.

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XV.

THE ANATOMICAL CHARACTER OF RACHITIS.

By T. C. Duncan, M.D., Chicago.

The early anatomical characters of rickets are not well given in any work I have examined. Softening and malformation of the ends of the bones are the recognized phenomena of this disease, but I am satisfied that this softening is a late result. Why should the bones soften? What has become of the phosphate of lime that gives solidity to the osseous system? It is not deficient on account of a lack in the food, but the trouble is in its assimilation. As Virchow says: "The abnormal condition consists not in a process of softening of the old bone, but in the non-solidification of the layers of new bone as they form. The old layers of bone are consumed by the formation of medullary spaces in the normal manner, and the new layers which are formed remain soft." This is especially noticed in the cranial bones. Why this softness or "cranio-tabes?" If we can explain the why, then we can see farther up the stream of anatomical abnormalities.

One of the earliest symptoms is "bowlegs;" another "open fontanels;" associated with these we have "sweating on the head." Why does the head sweat? Why is the sweat sour? This sweating begins early, and with it there is often "colic, green stools, restless nights, profuse urination." Are these a result or a cause. Why is not the lime deposited from the blood? Why is the child pale or waxy-looking? We are told that lactic acid dissolves the lime from the blood, setting the phosphoric acid free,

which accounts for the "profuse urine," "sweating," "pale face," etc.

A pale or waxy look is one of the earliest phenomena of so-called rickets. It is an effect upon the blood by the acids, and gives this condition a new phase, which is not covered by the term rickets. We are carried into that of indigestion. But all indigestion does not give rise to the train of effects we have been following. Why is lactic acid generated in such quantities as to dissolve the lime and thus cut off the nutrition of the bones? Why is the sugar of milk, which is changed into grape sugar, so rapidly dissolved into lactic acid and then into carbonic acid and water, *i. e.* profuse perspiration? (Vide *How to be Plump*, p. 50.) These questions belong to the essayist on etiology. They will be fully explained in a forthcoming work on diseases of infants and children.

Recognizing the disease, or the first of the train of symptoms which result in what is known as rickets, we have been able to cure these cases, 1st. By changing the diet, and 2d by selecting the proper remedy for the given case.

By changing the diet, I do not mean, with a nursing child, to take it from the breast, but to change the food of the nurse or mother so that the milk will be changed. Food containing much ferment, *i. e.* nitrogen (casein), will make this change rapidly, and even give rise to the butyric fermentation, *i. e.*, the liberation of the fatty acids, which poison the system even worse than the lactic acid.

Cows' milk and condensed milk are both liable to this rapid transformation, on account of the *free* lactic acid contained in them. In such cases I have found that the addition of dextrin (*i. e.* cooked starch) will direct the attention to the change of the latter into grape sugar, then into lactic acid. The addition of water and salt (Natrum muriaticum) also retards the generation of lactic and butyric acids by early dissolving the casein.

Starchy food, or vegetable food which contains much starch, I have found best for nursing-women, whether lean or fat. Lean women with rich *milk* will need a different diet, *i. e.*, more fibrin, oatmeal, meat, etc.

If the child is raised by farinaceous food, we should be on the

outlook for the long train of pathological phenomena which precede rickets.

The essayist on therapeutics will give the indications for remedies, and I would only emphasize the value of *Calc. carb.*, *Calc. phos.*, *Sulph.*, *Nux* and *China*.

The later anatomical characters being so well known, I did not deem it best to occupy your time with their enumeration, but to trace all these to the earlier phenomena and the causes thereof.

XVI.

THE PATHOLOGY OF RACHITIS.

By W. H. Jenny, M D., Kansas City, Mo.

Rachitis, formerly called the English disease, because of its frequency among the English, was first brought to the notice of the profession, as early as the seventeenth century, by Whistler, Boot and Glisson.

During the last fifteen years, Kölliker, Virchow and Herman Meyer have added to the researches into its pathology.

This disease is peculiar to children during dentition, although isolated cases are recorded by Virchow, who alludes to a case of congenital rickets, the bones of which are preserved in the Wurtzburg Museum.

Ritter von Rittershane speaks of another case, the skeleton of which is preserved in the Francis Joseph Hospital, Prague.

J. Lewis Smith speaks of a case presented by himself in Wood's Museum, Bellevue Hospital. On the other hand, Dr. West speaks of a case which commenced as late as the fifth year. Such is the variation of the disease; but most authors place the commencement of it during the first and second dentition.

Rachitis is a non-inflammatory disease of the vegetative system, and depends upon a non-assimilation of the calcareous salts to the osseous system, producing absence of these salts, and consequent softening of the osseous tissues, with enlargement of the epiphyseal cartilages; all the bones are regularly formed and physiological in structure, with the exception of lacking salts of lime. This leaves the bones pliable, and capable of being bent in any direction, according to the pressure from the weight of the child, the contraction of muscles or pressure from the atmosphere, as shown by the peculiar shape of the chest in rickety children, the projecting sternum forming almost an acute angle; hence the children are called chicken-breasted, and the enlargement of the costal cartilages forming the rachitic rosary.

The pelvic bones are bent and distorted, the spinal column curved and bowed, the cranial bones softened, and the head settled down until it rests between the shoulders, the fontanels remaining open, giving the head a flattened appearance.

Dentition, if it has not made its appearance, is very slow in coming on, and if it has commenced the teeth become black and brittle.

The bones of the head are so thin in some cases, according to Elsasser, that the dura mater and pericranium are almost in contact, the bones being translucent.

Dr. Elsasser gives great attention to the cranio-tabes, the softened points in the skull.

The lymphatic system is also deranged, and in the worst cases the spleen, liver and lymphatic glands are affected with waxy degeneration. Dr. Elsasser says that the brain-substance grows, not as in hydrocephalus, by effusion into the ventricles and on the surface of the brain, but that the brain-substance itself is increased.

The cause of the non-assimilation of the calcareous salts is said to be owing to the presence of lactic acid in the blood setting the salts free, so that they are eliminated by the kidneys instead of being deposited in the osseous tissues. The hypertrophy of the brain is an important feature, and is probably caused by oversensitiveness of the rest of the system, directing a greater flow of blood to the brain, and, being constant, adds to its substance, as the brain at this period of life has its most rapid growth.

I have treated several cases of rickets, and all of them have been in the better classes of society, where they have enjoyed the best hygienic advantages, and have had plenty of wholesome food, with air and exercise; but in every case the disease could be traced to some hereditary disease in the parents, mostly scrofulous heredity.

The disease, taken in its incipiency, seems to be easy of control with homœopathic treatment and proper hygienic means.

The remedies mostly indicated are Calc. phos., Calc. carb., Silicea, Sulph., Arsenicum, China, Rhus, Lycopodium and Graphites.

XVII.

THE AGE, CAUSE AND COMPLICATIONS OF RACHITIS.

By L. E. Ober, M.D., La Crosse, Wis.
F. L. Davis, Evansville, Ind.

In treating of that part of the subject under the consideration of this bureau which has been assigned to me, I shall not occupy the valuable time of the Institute in reviewing the various theories which have been advanced by different writers upon this disease.

My personal experience and observations relating to rachitis will not warrant me in claiming new discoveries, or in confirming any of the theories already advanced; neither do I believe the real cause of rachitis can be fully explained until the laws of nutrition are fully comprehended. In the above remarks I do not deny the fact that physiologists have made great and valuable discoveries concerning the phenomena of the nutritive process, and have fully described the conditions necessary to the fulfilment of this function. Pathologists have also greatly elucidated the rachitic process and described its essential features.

The age in which rachitis makes its appearance must be between the commencement and completion of the ossification of the bones, as the distinguishing feature of this disease is an interruption of the calcareous deposit in the bones during their growth; therefore, it must be distinguished from mollities ossium, the true nature of which is an absorption of the calcareous salts from matured bone. Assuming the above to be true concerning the pathology of rachitis, we are led to conclude that the disease may commence even while the fœtus is in utero, which may be termed congenital rachitis. Such cases may be rare, but they have

been noticed in sufficient numbers to warrant their recognition. More frequently the invasion of the disease occurs when the child is from six to ten months old, but may occur at any time between that and two or even three years.

The insidious nature of an attack of rachitis may prevent its recognition until considerable damage has taken place, therefore great care should be exercised in detecting the disease early, and prompt curative measures instituted while a cure may be more easily effected and deformity of the skeleton prevented.

Various theories have been advanced in relation to the cause of rachitis, viz., that the salts of lime pass from the body through the kidneys, or diarrhœa, bronchitis, pneumonia, lack of vasomotor nerve-force supplying the bones, scrofula, syphilis, or hereditary transmission—some of which are quite ingenious and interesting, but most of them refer more to the phenomena of the rachitic process than to the real cause of the disease, which is essentially a malnutrition of the bones, involving to a greater or less degree the nutrition of the entire system. No doubt in many cases this disease may have commenced when by some favorable change of circumstances or condition of the patient its progress has been arrested before the true nature of the malady has been discovered; while in many other cases a failure to detect the disease in its early stages has prevented a cure and resulted in great damage to the skeleton of the patient, therefore the importance of a recognition of the first symptoms of the disease, that its results may be averted.

It may be stated here that the prime cause of rachitis is a lack of a proper supply of the necessary material to support normal nutrition. A diminution of the vasomotor nerve-force will no doubt interfere with the nutritive process; but in what manner that should affect the normal deposit of the solids and not the organic portion of the bones we cannot explain, provided the lime-salts are contained in the blood in the usual quantity and condition.

If the lime-salts in the blood are deficient for the purpose required, or if they are taken from the blood and carried away from the body as effete matter, thereby depriving the blood of

its normal constituents, we can readily see the cause of the pathological state under consideration.

From what we know of the rachitic process, we conclude that a lack of the proper supply of nutritious material, with defective hygienic measures, are the prime cause of this abnormal condition. It is not only the children of the poor that are thus exposed, but children of the rich are not exempt if their care is given to irresponsible nurses, or the mother's habits are such that she is incapable of supplying them with the proper nourishment.

The general debility attending rachitis, either as a cause or consequence, may so impair the nutritive powers of the system as to render the child unable to endure the force of other diseases, such as scarlatina, rubeola, pertussis, etc. The diseases which may be considered complications are, diarrhœa, catarrh, bronchitis, convulsions, scrofula, yellow softening of the brain, and laryngismus stridulus; the last two may belong to the disease, as also does the deformity of the skeleton.

L. E. Ober.

An intelligence materializes with such energy as to grasp the pencil from my table and trace in legible characters the following preamble and resolutions.

A peculiarity of the human species is, that, free from all disturbing influences, with a proper quantity and perfect quality of atmosphere, water, food and clothing, accompanied with sufficient exercise, and time allowed, children will grow to perfect manhood and womanhood; and their children and children's children, with an environment of the above conditions, will continue to be perfect in development, in structure and size, on to the end of time.

Another peculiarity is, that diseased parents may and do transmit the result of that diseased condition to their children. The Albino may transmit that disturbed play of forces to his or her child that will develop its kind, and the imprint remains fixed during life.

Tuberculous parents transmit the consumptive diathesis to their children, and at an age not stated positively in nature's book, consumption in all its silent terrors bursts upon them, and

they are unable to shake it off until they step out of the body into nonentity or over into the spirit land.

Instances are not wanting wherein for five generations no evidence of hereditary disease was known, but nature, true to itself, gives evidence of a "crooked" force at play in the development of the human species by a curvature of the spine, dwarfed form, and feeble, sickly constitution.

A consumptive genius, a scrofulous genius, a syphilitic genius, may all be transmitted to the offspring.

This is no new doctrine. But out of it a close observer may trace the cause of rickets.

Small-pox exhausts its energy on the person attacked with it, and the results are not transmitted to the next generation, for the children of persons who have had small-pox are not exempt from the disease, and are liable to take on the disease when exposed to it.

Looking out over the sea of humanity, observing the little ones gushing into existence, giving physical expression of perfect forms, the faces of parents beaming with delight, and heart-throbs bubbling over with expressions of thankfulness for such grand results and noble achievements, as unto us a child is born. But hark!

The east wind is blowing, unobserved by the parents. However, scientific men, who guide in a measure the destinies of the race, observe a cloud arising, and by analysis comprehend that the cloud has three properties, namely,

Consumption, scrofula, syphilis, about equally blended; and as it approaches, the thunders are not loud but the mutterings are deep; its shadows are darkening and the smell of the last ingredient most repulsive and not to be forgotten; with prehistoric evidence of its effects on the human race on this continent reaching back to the days of the mound-builders, and the drops and streams of influence rained down from that terrible cloud, strike in tender places. In fact, it has generally preceded the birth of the child, and before the child is two years old the mark of this dreaded and repulsive storm is apparent, either in a deathbed scene and funeral, or softening of the bones, or rather in nature refusing to ossify the cartilaginous substance intended for bone, or in an

uneven development of the bony structure, in the curvature of the spine, in catarrhal conditions of the mucous membrane, in diarrhœa, in otorrhœa, in asthma with its deformities, possibly in progressive muscular atrophy, certainly in progressive tissue atrophy.

The child of to-day with the apparent "potency and promise" of perfect development may, in a brief time, show the effects of hereditary disease in the pinched appearance of the face, by the cessation of development in the face bones, by an apparent though not an unnatural development of the frontal bone; the limbs become twisted, bended and distorted, "the articular ends of the bones appearing enlarged," and the ensemble of effects in the case point out unmistakably the truth that there is a disturbing force present, moving with such energy as to unbalance the formative and growth forces necessarily present in the perfect development of the human species. Therefore,

Resolved, That the best method of treatment of such children who are affected with *rickets* is to feed them on milk and Graham bread, oatmeal and a vegetable diet generally, give them limestone water or lime water to drink, keep them much in the open air, give them Cal. carb. and Phosphorus, and at the same time support the body with such appliances as will lift the weight of the body from the bony support, and yet allow the use of the muscles for exercise.

F. L. DAVIS.

XVIII.

THE DIAGNOSIS, PROGNOSIS AND HYGIENIC MANAGEMENT OF RACHITIS.

By Francis Brick, M.D., of Worcester, Mass.

The question of diagnosis in the disease under consideration is of great importance, for by the early recognition of the premonitory symptoms we may be able to prevent a full development of the disease.

Dr. Eustace Smith says, in his book on *Wasting Diseases of Children*, "Rickets, although one of the most preventable of children's diseases, is yet one of the most common. It begins insidiously, presenting at first merely the ordinary symptoms of defective assimilation, and attention is often not attracted to it until the characteristic changes occur in the bones, which place the existence of the disease beyond a doubt."

Rickets is the result of impaired nutrition, associated with influences favoring its production, such as hereditary tendency, unsuitable food and unwholesome localities. Yet by reason of improved methods of treatment in conditions of malnutrition, both hygienic, dietetic and therapeutic, the disease is becoming less frequent.

It is a disease peculiar to infancy, usually occurring at some period during dentition, although it may commence very early, even during the first or second month after birth, and seldom continues later than the fifth or sixth year, although the deformities resulting may be permanent.

The disease is distinguished by change of growth and nutrition of the bones, altering their form, composition and texture. These changes are preceded by certain disturbances of the gen-

eral health, manifested most notably in derangements of the alimentary canal, by indigestion and diarrhœa; also by restlessness, irritability, muscular weakness, the muscles feel soft and flabby, blanching of the skin, and, as the disease advances, the bones become tender to touch, and even painful. They are soft and gelatinous. The urine contains an excess of phosphates. Emaciation is generally present, although the child may appear plump and yet be rickety. Rickety children are apt to be precocious, excitable, with large heads, open fontanels, restless during sleep, throwing off the bedclothes. They sweat profusely about the head. They are backward in cutting the teeth, and when these do make their appearance they are frequently small and imperfect.

If the child has previously shown a disposition to use the limbs in walking, he gradually loses the power to do so, preferring to sit; and as the characteristic changes occur in the composition of the bones, more or less deformity appears.

The growth of rickety children is interrupted. The skull may be increased in size, or appear so from the small face and body. The fontanels remain open from the backward union of the sutures. From changes in the ribs and vertebræ the thorax is shortened, the sides being flattened, and, pushing the sternum forward, produce the so-called "pigeon-breast." The cartilages are thickened. The clavicle may be bent and the scapula thickened and distorted. The vertebral column may be curved in various directions, as modified by the position of the child in sitting or the manner in which it is habitually carried.

Deformities of the pelvis are also liable to occur from similar causes, and may prove serious later in life. In the extremities the disease is shown by enlarged epiphyses, shortening and curvature of the bones. The disease may be acute or chronic, but all the cases which have come under my observation had the usual premonitory symptoms, and were gradual in appearance, and the morbid symptoms as gradually disappeared, following the improvement in the powers of digestion and assimilation.

Prognosis will generally be favorable, although in very young patients, if the symptoms are very strongly marked, the prognosis should be guarded; also in cases that are far advanced, with great distortion of the chest, impeding seriously the action of

heart or lungs. The particular danger to be apprehended is from complications from acute diseases, as rickety children offer but slight powers of resistance and easily succumb. Measles and whooping-cough are to be dreaded.

It is said that rickety children are quite liable to laryngismus stridulus, but I am unable to verify it. Hydrocephalus may occur coincidently.

Hygiene.—If the efforts to improve nutrition are successful, the disease may be arrested at any stage, and in order to secure the above, proper hygienic management must be observed; above all, healthy well-ventilated habitations and perfect cleanliness. The little patient must be frequently bathed, warmly clad, and given daily exercise in the open air and sunshine. Inunction with oil and hand-rubbing are beneficial, arousing the assimilative functions. If the mother is unhealthy, especially if previous children have been rickety, she should not continue to nurse the child, but secure a healthy wet-nurse whose milk contains more abundantly the phosphates and other inorganic material essential to the formation of bone.

If the child is "hand-fed," gruels prepared from the various cereals, particularly wheat or oats, may be given, mixed with cow's milk. Sometimes the child seems unable to digest milk, except with the addition of lime-water, which has in some instances worked admirably, the lime no doubt serving a good purpose towards strengthening and building up the bones. Milk-sugar should be used in sweetening the food, it being less liable to disagree, and no doubt serves an important purpose in nutrition.

In fact, with perfect hygienic and dietetic management, it is hardly possible for the disease to occur; again proving the truth of the old adage in regard to the "ounce of prevention," etc.

XIX.

THE DIAGNOSIS, PROGNOSIS AND TREATMENT OF RACHITIS.

By Sophia Penfield, M.D., Danbury, Conn.

With few exceptions, and those a result of inheritance, the entire number of rachitic patients are found among the poor of crowded cities. This is a disease more prevalent in Europe than in America, the smaller cities and towns of this country being almost entirely exempt. It is a disease of want. Want of fresh air and of sunshine, want of nourishment and of cleanliness. Out of this poverty grows a want of assimilation of food to the tissues of the body, and an ever-increasing indigestion, that results in a quickened circulation.

The bones, at this their most active period of growth, owing to the increasing inflammatory processes (Niemeyer), do not readily assimilate the phosphates constantly furnished through the food, and an abnormal excretion of them takes place through the urine as one of the premonitory symptoms of this disease.

Symptoms.—The symptoms seldom appear before the first or after the second dentition. If they occur in the early months, as is usual with bottle babies, the teeth are late in making their appearance, and are irregular. In nursing infants the symptoms show themselves at the time of weaning when artificial food is given.

There is indigestion, with nausea and vomiting of unchanged milk or milk soured, followed by diarrhœa, with green, mucous, frothy stools, becoming profuse, sour, watery and chronic, followed by emaciation of limbs, and often by distended abdomen. There are occasional feverish attacks with fretfulness, uneasy sleep

with sudden startings, profuse sour perspiration about the head and shoulders during sleep.

The child notices less, is less playful, lies quiet, and cries if touched. There is increasing pain when limbs or body are moved, followed by enlargement of the wrists, knees, elbows and other joints.

The fontanels remain open longer than usual, as in chronic hydrocephalus. The parietal bones are projected outward and upward, giving a rounder shape to the head than in hydrocephalus, whose projection is downward and outward, from the pressure of liquid. Hydrocephalus is sometimes a complication of rachitis. The fontanels and sutures increase in size on account of the softening of the edges of the cranial bones. From pressure of the brain within and of the pillow without upon the softened occipital bones, they become moulded to the lobules of the brain, and if recovery takes place at this period they retain the deformity—complete cases of cranio-tabes. From this pressure upon the softened bones of the brain, as well as from sympathetic irritation, arise various cerebral symptoms that accompany the disease, rolling of the head, squinting, spasm of the glottis and convulsions. Bronchitis is a most frequent complication.

As the disease increases the anterior ends of the ribs enlarge, the posterior ends are bent forward upon themselves and upon the vertebræ, by the united action of the muscles in respiration and in movements of the arms, pressing the sternum forward, giving a chicken-breast deformity. This oftener occurs while the child lies in the cradle. If the child has begun to sit up or walk before the onset of the disease, the softened vertebræ are curved by the weight of the head and shoulders, the arms are bent by muscular action, the pelvic bones and long bones of the legs by the weight from above, and also by muscular action.

When the disease begins in the early months and recovery soon takes place, the head often presents the only deformity, or it may be accompanied with a chicken breast, while the limbs and spine remain intact.

When the symptoms appear during the teething process they vary from those of the early months. There is usually constipation instead of diarrhœa. There is no tenderness or soreness of

the muscles on pressure, but occasional pains, especially when making a misstep, and fatigue after slight exertion. The bones are seldom affected at this period. The deformity first appears in the legs, then in the arms, spine and pelvis; frequently only the limbs alone are affected. When the disease is checked at this stage they seldom attain their normal growth.

Prognosis.—If one may divide its symptoms from a disease, we may say rachitis seldom proves fatal. The deaths which occur under this head result from the exhaustion of diarrhœa or from complications, as chronic hydrocephalus, spasm of the glottis, convulsions or bronchitis, by far the greater number falling victims to the latter complication from collapse of the imperfectly aired lungs.

Hygienic Treatment.—Hygienic conditions are of first importance, and owing to the surroundings of these patients and the difficulties attending their removal from them, when obtained by far the greatest obstacle is overcome. The patients should be kept in dry, sunny, airy rooms when indoors, and supplied with good nourishing food. If for infants brought up by hand, fresh milk if it can be obtained; if not, condensed milk has given me better results than the various prepared grains.

The children must be kept outdoors as much as possible when the weather permits. They should be taken out on pillows or mattresses rather than in the arms, and upon hard pillows instead of soft, as the soft pillows and the uneven pressure of the arms allow the soft bones to be moulded into deformities. A horizontal position is best maintained as long as possible, with no high pillows, and with frequent changes of position from back to sides.

When the diarrhœa is completely cured in its early stage, the rachitic symptoms entirely disappear. Our chief remedies for this period, as well as the succeeding stages, are Calc. c., Calc. p., Lycop., Sil. and Sulph. Many other remedies are indicated in the various complications to which the patient and the disease are liable, as Bell. in cerebral irritations, or Bry., Phos., Phos. ac. in bronchitic attacks. Occasional symptoms suggest Fluor. ac., Merc., Hep., Sulph., Mez., Sep.

It is useless to attempt a suggestion as to what remedies will

be indicated during the progress of this disease, owing to the variety of symptoms in individual cases, but the five remedies first mentioned are indispensable to this class of patients. We will run over their characteristic symptoms, and see how well they correspond with the symptoms of the disease.

Calc. c. is indicated in early stages of organic diseases when there is lack of assimilation of food to blood and tissues during dentition; open fontanels with profuse sweat (not sour) about the head, when sleeping, in children inclined to fat; vomiting of soured food; green mucous diarrhœa, frothy, watery, sour, painless (not excoriating); distended abdomen and emaciated limbs; urine of strong, pungent odor; all symptoms relieved by warmth and quiet.

Sulph. is indicated in children of dry, flabby skin, with a prematurely old look, after suppressed eruptions; vomiting of milk, sour or unchanged; green, mucous, frothy diarrhœa, profuse, watery, and *excoriating*, with itching aggravated by warmth; wakefulness, restless sleep, with crying out; aversion to being bathed.

Sil. is indicated later in the disease, when the bone symptoms have appeared. There is tenderness on pressure, and soreness when moved; a desire to be let alone; profuse *sour* sweat on the head; aversion to animal food; stools sometimes undigested and watery, at others constipated; stitching pains about the joints, aggravated at night; irritableness.

Lycop. is indicated in nausea after cold drinks, not after warm; flatulent colic, with rumbling in the abdomen and bloatedness, relieved by motion.

Also where there is dysuria, with sandy deposit in urine; dyspnœa, with cough after exertion; whizzing breathing, with rattling in the chest; affects oftener the left side; follows well after Calc. c.

Calc. p. is indicated in frequent vomiting of children, sour and with belching; uneasiness and bloating at pit of stomach, with sharp pains; cutting colic with soreness, followed by green or slimy diarrhœa, with flatus; tenderness of muscles and pain in joints; enlargement of condyles; open fontanels; non-union of fractured bones; upper right and lower left side most affected.

XX.

THERAPEUTICS OF RACHITIS.

By H. C. Allen, M D., Detroit, Michigan.

Clearly defined and well-marked cases of rachitis that have been permanently cured by a single remedy, or in fact by any number of remedies, are rarely reported in the periodical literature of our school. This is probably not to be attributed so much to a lack of cases to report, as to the slow, tedious and very unsatisfactory character of the disease in question. A frequent cause may also be found in the fact that, notwithstanding our utmost care, a fatal termination of the case from some intervening acute disease, such as pneumonia, capillary bronchitis, hydrocephalus, measles, scarlatina, etc., often occurs. Owing also to a want of frankness on the part of the physician, or a lack of confidence on that of the patient, a change of treatment by a change of physician occurs, and we lose sight of the case. The therapeutics of rachitis is confined to a very few remedies, and the measure of our success will depend to a great extent upon the care exercised in their selection and the pertinacity with which we follow Hahnemann's instructions in their administration. The wisdom of Hahnemann's instruction as to repetition of the remedy was never better illustrated than in the treatment of rachitis. The efficacy of potentized remedies has never been more clearly demonstrated than in the contrast drawn by their successful exhibition in this disease. The attempt on the chemical theory to correct a functional derangement, by administering the Carbonates and Phosphates of lime and soda in massive doses when the urine is already loaded with

the salts of lime, is now generally abandoned in our school, and soon will be in all schools of medicine. The excretion of the salts of lime is not *the cause* but *the effect* of malnutrition, and their exhibition in a crude form and in massive doses can only act injuriously; and the sooner that fact is recognized the sooner will the practice be abandoned.

Bone cannot be made in that way, nor can the lacking chemical constituents be replaced by giving them in their crude form in the massive doses of the other school.

Baryta carbonica.—The child does not grow, is dwarfed and stunted, yet nurses and eats well. Very susceptible to cold and sensitive to change of weather.

Belladonna.—Child is subject to congestions of brain, particularly when teething, with alternate paleness and redness of the face; enlarged pupils; pain and difficulty in swallowing; sleep is restless and disturbed, there are frequent attacks of febrile excitement; pulse full and rapid, notwithstanding which there is no moisture of skin; abdomen thick and protruding; is indicated in all febrile excitements to which the child is subject during the course of the disease; squinting; curvature of vertebræ, particularly of lumbar region.

Fluoric acid.—Where the exciting cause can be traced directly to scarlatina, as one of its sequelæ.

Abies canadensis may prove a valuable remedy in this disease. As yet we have only a meagre proving and few clinical cases to verify its use. I have no special indications to give.

Ruta graveolens.—Tottering gait, as if the thighs were weak; much pain in them on walking; lower limbs heavy and feel so restless that he cannot keep them still; great debility; worse in cold damp weather.

Staphisagria.—If syphilis be suspected, and the teeth have black streaks running through them, edges rough and crumble away readily.

Asafœtida.—If disease can be traced to a syphilitic origin.

Oleum jecoris aselli (in trituration).—The exact sphere in which this too-often-overlooked remedy is indicated in the treatment of rachitis, is as yet but dimly outlined either in the Materia Medica or clinical experience of our school. When the

patient is old enough to make known his aches and pains, he complains of intolerable pain in the extremities; is easily tired; the teething process is much delayed; the fontanels and cranial sutures are widely open; abdomen distended, and profuse, watery, offensive diarrhœa, with nightsweats, are present.

Phos. acid.—The *child has grown too rapidly* (Baryta carb., the exact opposite); is listless, apathetic, cares for nothing, wants nothing, is totally indifferent to all external impressions, and if old enough complains of great weakness and exhaustion; the abdomen is much distended; great rumbling in the bowels, with a copious, painless, white, watery diarrhœa, notwithstanding which the child passes large quantities of colorless urine; the extremities are cold and moist. Most useful in the later stages of the disease.

CALCAREA CARB.	SILICIA.
"In diseases where the secondary assimilation of digested food to blood and tissues is defective, Calc. may restore healthy free action."—*Hughes.*	"It influences nutrition rather than functional activity of the tissues, hence is better suited to organic than functional diseases. *Defective nutrition is its keynote.*"—*Hughes.*
"Its most potent action is to restore perverted constitutional dyscrasia, rather than local manifestations."—*Hughes.*	
Acts with equal promptness in acute and chronic forms of the disease.	Its action is *slow* and *deep*, hence better adapted to the chronic than acute form of the disease.
Fontanels and cranial sutures widely open.	Fontanels open.
Pupils usually widely dilated.	Pupils usually normal or contracted.
Child does not sleep after 2 or 3 A.M.; but is weary and sleepy all day.	Sleep disturbed by a number of causes, such as dreams, nocturnal cough, or diarrhœa.
Perspiration in large drops on the head, which wets the pillow far around where the child is sleeping. *Perspires when asleep, whether covered or not.*	The child perspires about the head at night. *The head is wet from sweating, still the child must be wrapped up, because so sensitive to cold.*
Feet are cold and damp, as if patient had on wet stockings; rest of body warm and easily kept warm.	Decided want of vital warmth even when taking active exercise; impossible to keep warm.
Great craving for inadmissible food.	Hungry, but cannot eat.

CALCAREA CARB.

Sour vomiting of ingesta during dentition.

Abdomen distended, hard, with loud rumbling of flatus and diarrhœa accumulation.

A profuse, watery, painless, putrid, sour-smelling diarrhœa during dentition. Chronic diarrhœa, with white, clay-like, chalk-like stools.

Children with skin dry, muscles soft and flabby, hair looks like tow. They scratch the itching scalp when they are awakened or their sleep is disturbed.

The calcarea subject grows too rapidly, is large, overgrown, hydrocephalic; bones are not able to support the weight of the body.

The diaphyses of the long bones are bent and curved, and the vertebral column is too weak to carry the weight of the body.

SILICIA.

Vomits immediately after drinking.

Hot, distended abdomen. Pot-belliedness, with constipation.

Constipation; difficult stools, as if the rectum had not power to expel them; stool recedes after having been partially expelled.

Unhealthy skin; small scratches suppurate and heal with difficulty; torpid, spongy, readily bleeding ulcers, which secrete a thin, fetid, yellow, sanious fluid.

The Silicia patient is thin and scrawny, and has a prematurely old appearance.

The hypertrophied extremities of the long bones are very painful, and extremely sensitive to pressure.

APPENDIX.

DISCUSSION.

THIRD DAY—MORNING SESSION.

DR. H. C. ALLEN, of Detroit: Mr. President, I have studied this question considerably, and fully appreciate Dr. Ober where he says we find nothing, either in our own or in any other school, relating to rachitis, and I am much astonished to find that we know but little about it, and have scarcely any literature on the subject.

I have found but two cases of reported cure. One by Dr. T. F. Pomeroy, of Detroit, is published in *Raue's Record.* The other is by a German physician. I have treated but few cases which I cannot claim to have cured. I would like to hear from Drs. Smith or McManus, or from any one else in reference to its cure. Grauvogl says that scrofula has nothing to do with its cachexia, and that experience proves that the softening of the bone process does not depend on scrofula; that it is an ulcerous process, and not decay of the osseus material that we have.

I regret that the best authorities did not recommend my favorite remedy, Sulphur. Now I wish to know if any of the members have cured a case of rachitis.

DR. S. P. HEDGES, of Chicago: Mr. President, Having been for a number of years in charge of the Chicago Half-Orphan Asylum, I have observed that rachitis seems to result from a faulty assimilation, *i. e.*, bad nutrition.

We all agree on that point. Now, in regard to the treatment, the difficulty we all experience is, that owing to the long duration of the disease, the children affected often have other diseases. We must watch the cases through in order to express an opinion.

I have never noticed a cure from any one remedy, but I have remarked that if the child is nursing we can accomplish most by giving our medicines to the nurse. Care should be used in such cases. The mother's milk can be changed by a change of diet.

A MEMBER: Do you give medicine to the nursing mother

DR. HEDGES: I consider it quite as important to give the mother medicine as the child, and that the diet of both is of the utmost importance. If the child nurses, regulate the mother's diet with great care.

It is important that this disease be recognized early, before there is any pathological change, and yet this is seldom the case. The enlarged ends of the bones draw our attention toward the point. You will notice the slow closing of the fontanels, the tardy teething, and the peculiar sallow look of the skin.

If we wait for these anatomical changes the result will be tedious, but any one could report a case as cured by a remedy.

It is by recognizing the long train of early symptoms, the condition of the bowels, the sour sweat, the general state of the child, that we can win success. Our great remedy is, proper food!

When we get to recognize these cases, so that we do not allow them to run on too long, we shall cure them.

I repeat that in my experience of eleven years, in the asylum and in my own practice, the one thing needful is proper food.

DR. L. E. OBER, of La Crosse, Wis.: Unfortunately I did not hear these papers, but from Dr. Hedges' remarks I infer that one important symptom, that I consider as characteristic in the early discovery of the disease, has not been referred to. I mean the sweating of the infant's head. Where you see that, look out for rachitis.

DR. W. H. JENNY, of Kansas City, Mo.: I did not intend to speak, but must in order to answer certain remarks regarding the scrofulous origin of the disease. While I believe it is non-inflammatory, I think it may come from scrofulous parents, for with such a parentage children assimilate their food less perfectly. I placed this subject before the Institute because I have had several cases which I diagnosed as incipient rachitis, and I found that little was to be seen in the books upon the subject. Although the papers read here are fine, they prove this, and that we have all much to learn about it.

Of my three marked cases, one died, which was past hope when I commenced on it.

DR. EDWARD BAILEY, of Detroit: Mr. Chairman, I can neither throw light on the origin, rise, or treatment of rachitis, but merely wish to offer a suggestion. It is a matter of long experience, that certain temperaments between husband and wife fail to produce children, and that these temperaments are very nearly identical. If persons of sanguine temperament become united in marriage, I think they seldom have children, or if they do they are weak and feeble. The nearer identical the tempera-

ments the more true is this fact. May we not look in this for a cause of rachitis?

I trust that during the next year the members of the Bureau of Pædology will watch for these cases, and whenever they find one that they will try to ascertain how nearly the temperaments and pulses correspond, or how widely they differ.

DR. TAYLOR: Does Dr. Bailey evolve this proposition from his inner consciousness, or has he authority for it? This idea of temperament seems to me a great humbug, no two authors agreeing as to what it really is. One describes a certain person as having a certain temperament, and another gives the same person an entirely different temperament.

In my opinion it is impossible to intelligently separate one temperament from another. Some years ago I treated the husband of a family for secondary syphilis, and made what I thought was a good cure.

In the course of time his wife gave birth to a male child, and within six or eight months this child developed marked rachitic symptoms. Knowing the syphilitic history, I gave the child Iodide of mercury, third, which helped it, although the child seemed on the point of death. It is deformed now, but enjoys fair health. Is it not possible that this whole range of similar diseases arises from syphilis? I think we should make inquiries in that direction.

DR. BAILEY: I would like to know if Dr. Taylor evolves this from his inner consciousness, or has authority for it?

DR. TAYLOR: I claim originality for this statement, but none in the matter of two temperaments being alike. There is so much uncertainty and confusion in the matter of temperaments, I do not think it makes any difference if the doctor marries the same temperament as his own as far as children are concerned.

DR. BAILEY: The best thinking men have been unable to form a connection between syphilis and rachitis. There must, of course, be a cause for the disease, and it is worth while to investigate for it. When you find a case of rachitis, observe if the parents are of the same temperaments. I shall not be offended if my theory is not sustained by facts. I know people who mark out all the points of a fine theory, and then undertake to make facts sustain it, and if they fail get very angry.

DR. LEWIS BARNES: I suppose we have temperaments, but I wish now to speak about our treatment of rachitis. It was acknowledged that most of our remedies fail, or were so long in their operation as to give no definite results. I am of the opinion that the disease arises from lack of nutrition. There is some

failure in the system of these infants that prevents them from properly assimilating food, air, water, and they give out.

For a year I have been experimenting with electricity. Some of you may say it is not homœopathy. It has been much confused, and the works on it are in as much chaos as our works on Materia Medica, but from them I have gleaned a few facts. It is a fact that there is a natural current of electricity in the system; by testing a nerve you will find a natural current running in one direction in one set of nerves, and in another in another set. By applying an artificial current to the nerve in the same direction as the natural current, the amount of electrical fire is increased, unless too strong a current is used, and then it is weakened. If you run your artificial current, no matter how weak, in an opposite direction to the natural current, that is weakened.

This current has a lasting effect, acting as a tonic on the nervous system. Now make the current soft enough, and it must be very soft for children or very old persons, so soft in fact that it cannot be felt, and let it run quietly through the nerve, setting the current always in the right direction, not giving it too long, and closely watching its effects; with this give the appropriate food, and you will certainly see a gradual improvement in the tone of the system, and I will say, from my experience with this agent for a year or two, that you will also see cures.

So far as I have experimented the effect is remarkable,—the tone is raised, the vitality and appetite increase. The battery does more good than anything else; this is not theory, but fact.

Dr. Jenny: Has Dr. Barnes found the nerve that carried the current back and forth?

Dr. Barnes: Yes, sir. In the motory nerves the current is out or down from the centre, but in the sensory nerves it runs up. In the great sympathetic system the current is uniformly toward the brain.

The general current in the spine is from above down, although there seems to be a kind of counter-current, especially through the spine. It matters not where you touch the spine, the current will follow the natural current. I have proven this by experiment. You will only do good by sending the current in the natural direction through the other nerves.

Dr. Taylor: How did you discover this?

Dr. Barnes: I studied the subject thoroughly from all the books on electricity, and eliminated the facts by a series of experiments on the nerves and muscles.

Dr. L. E. Ober, of La Crosse, Wis.: How can the doctor apply the electricity so as to affect the appropriate nerve?

DR. BARNES: To answer that question would occupy too much time; it can be found in the books.

DR. B. W. JAMES, of Philadelphia: Did Dr. Barnes in his experiments receive the results by impression, or did he use the galvanometer? Did the galvanometer indicate that the electrical current was in the direction that he stated?

DR. BARNES: I used in the experiments referred to to-day the electrometer and galvanometer. I took no evidence that was uncertain.

DR. BEEBE, of Chicago: I did not hear the papers, but I think that while the etiology of scrofula and rachitis is similar, yet the diseases differ. I think scrofula arises from malnutrition, due to a want of absorption of certain elements by the system, especially the vegetable elements, but I cannot definitely state just what elements are wanting. These elements being deficient, and this can be proven, the equilibrium in the blood-plasma is disturbed, the lymphatics are overcrowded with work, become hypertrophied, and the skin is obliged to do some of their work. For instance, in the crusta lactea of children we have an example of this. If the digestion is imperfect, if the food given to the young child be of an improper nature, it results in its decomposition in its stomach, especially if it be milk. Lactic acid is thus created in excessive quantities, is absorbed and carried through the system, the lime-salts that should form bone unite with the lactic acid and thus exist in excess, and the bones are weakened.

In scrofula there is simply a malabsorption of the elements of nutrition, but in rachitis the excess of the acid uniting with lime salts prevents bone-nutrition. We must thus treat our cases from a chemical stand-point; we must correct the digestion and assimilation with proper food; we must seek to neutralize the lactic acid in excess by adding an excess of lime-salts, and allowing them to unite with the acid. I am accustomed to give lime in some form in excess in the food, and I think experience sustains my theory. We can hardly dwell too much on the proper care and feeding of infants.

On motion, the discussion closed.

SECTION XIII.

REPORT

OF THE

BUREAU OF GENERAL SANITARY SCIENCE, CLIMATOLOGY AND HYGIENE,

D. H. BECKWITH, M.D., ... Cleveland, O.
B. W. JAMES, M.D., ... Philadelphia.
T. S. VERDI, M.D., ... Washington, D. C.
J. P. DAKE, M.D., ... Nashville, Tenn.
A. R. WRIGHT, M.D., ... Buffalo, N. Y.
L. D. MORSE, M.D., ... Memphis, Tenn.
W. H. LEONARD, M.D., ... Minneapolis.
G. W. BARNES, M.D., ... San Diego, Cal.
E. G. COOK, M.D., ... Chicago.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER III.

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IX. The Ventilation of our Homes, ... D. H. BECKWITH, M.D.
X. The Climatology of American Health Resorts, . . . B. W. JAMES, M.D.
XI. The Climatology of the State of New York, ... A. R. WRIGHT, M.D.
XII. Village Drainage, ... L. D. MORSE, M.D.

VII.

SANITARY SCIENCE.

By T. S. Verdi, M.D., Washington, D. C.

It might be reasonable to suppose that physicians are sanitarians. It might even be deemed offensive to be told that physicians are not sanitarians. Yet how many are there among them who are students of sanitary science, or workers in the practice of it? Gentlemen, sanitary science is not adequately taught in medical colleges, and if I find it mentioned in the curriculum of studies of some medical college, I know it is subordinated to matters which are regarded as of much greater importance. Yet sanitary science is and should be considered the most important branch of medical science. Medical hygiene is but a small part of what is now called sanitary science. The former dates from the earliest history of the tribes; the latter is of very recent date. What might be called public hygiene in olden times did not constitute a science. Anciently, when physical science and chemistry were unknown, the priests enforced a crude form of hygiene through religious ordinances. As civilization advanced, it became the study of the prophet, the legislator, and the philosopher. In this social evolution we find Moses invoking Jehovah, Lycurgus appealing to patriotism, Hippocrates interpreting nature. The first exercised authority through the sanctuary; the second by the force of the ruler in the interest of the state; but the third is the humorist and the philosopher who teaches precepts for the preservation of the people through the laws of nature. To the latter is due the beginning of a school which has now developed into a scientific system that will for-

ever prevent those fatal epidemics that depopulate whole countries.

Anterior to the school of Cos medicine was purely sacerdotal, and was represented by prophets who regarded disease as of divine origin. Man is apt to attribute to divinity everything he cannot master or understand, and having done so he folds his hands and waits with comfort. Such education leads to criminal indolence. The influence of the teachings of those early priests is felt even to this day. During an epidemic of small-pox in Washington, while the Board of Health was straining every nerve and every muscle to overcome it, one of its worthiest members said: "If God chooses to visit Washington with this scourge, I seriously doubt our authority to interfere."

Moses threatened the Jews with the wrath of God and a list of such fearful diseases that makes one's flesh creep. But Moses had great faith in himself, however, and had he lived in an enlightened age like the present, he would have been a most scientific sanitarian. His prophylactic precepts, enforced through religious ceremonies, were very potent in the preservation of the health of the people. Upon the Cohen fell the execution of the sanitary measures. He was constituted the health officer. He declared what diseases were contagious and enforced the strictest isolation. If the leprous seemed healed it was for the Cohen to declare him so and reinvest him with civil rights. An infected person was considered unclean and repulsive to God and man. In Leviticus we find how far sanitary regulations were carried. I will give you here a specimen or two. Chapter xiv, verses 45 and 46, read as follows:

"And the leper in whom the plague is, his clothes shall be rent, and his head bare, and he shall put a covering upon his upper lip (most of you would be considered lepers), and shall cry, Unclean! Unclean!

"All the days wherein the plague shall be in him, he shall be defiled; he is unclean; he shall dwell alone; without the camp shall his habitation be."

To this general law regulations were enforced, such as the burning of infected clothing, the burial of fecal matter, the disinfection of habitations by removing stones, the plaster from the

walls, and even the demolition of dwellings. Cohabitation with wife was forbidden at certain periods. Blood-marriages were forbidden, to prevent the deterioration of the races. In diet they had forbidden eating pork, and circumcision, although a religious observance, was dictated for sanitary purposes. Even St. John, I think, had, in part, in view the cleansing of the Jews when he baptized them in the river Jordan. Lycurgus went so far in his sanitary enthusiasm as to order the death of all feeble children. So we must acknowledge that our early fathers recognized, as most important to human welfare, sanitary practice.

The great achievements in the process of civilization of nations, of races; the success of generations in the advancement of knowledge; the happiness of families or individuals; indeed, the great problem of mental development, the scale of progress in human understanding, all are based very largely, if not exclusively, upon the health of the actors in the great human drama.

Buckle says that nature—meaning the conformation of the earth with its mountains, its forests, its seas, its climate—has had a greal deal to do with the mental development of nations and races. That where nature could not be subdued through its formidable barriers to human understanding, man was overpowered by his own insignificance, and remained tame and inactive instead of taming nature. That, on the contrary, where nature presented fewer obstacles man set to work to conquer the obstacles within his power, and that in the strife to conquer and subdue nature to his will or to his advantage, he became active mentally, and thus developed by gradation that intellect that has civilized the milder and less rugged soils of Europe. We will not deny these premises, but we will add that in this very struggle, in this exercise of body and mind, he has maintained that health that enabled him to conquer.

Health means not only absence of disease, but physical development. Medically, its meaning may be restricted to the commonly accepted meaning of the word. Philosophically, it must mean more. The brain must attain physical development to manifest mental power. Medically, a man may have a weak brain without disease. Not so philosophically. What impedes its growth would constitute disease. From the same reasoning

it may be deduced that an inferior intellect is the result of a limited growth of the brain. Progression in acquirements being the "raison d'être" of the brain, it follows that an undeveloped brain, weak in the manifestation of mental conceptions, is philosophically speaking, a diseased brain, even though no apparent disturbance is evident to its possessor, and no want of correlation exists with the other organs of the body.

It is no sign of the health of our race that we descend from giants. Disease impedes health, prevents development; hence sanitary science, the science for the prevention of disease, is of the utmost importance to the well-being and development of nations and races.

It is pitiful to see a medical man attempting to cure the sick without a thought for a mode of prevention. Did physicians understand sanitary science, practically as well as theoretically, the endemics and epidemics that decimate our populations could not exist. Were they sanitarians they could not quietly witness sanitary science practiced by ignorant policemen, or committed to the care of unprofessional councilmen. Their protest would reach even the apathetic ear of the rapacious politician. The mayor would not be the cohen. Where do you find in your local governments sanitary engineers that see to it that your dwellings are not turned into graves by the builder or the plumber? Where do you find experts to see to it that no unwholesome food is exposed for sale on the vendor's shamble? or that factories, emanating noxious gases, are not erected in your midst?

Many physicians enter the room of a typhoid or diphtheric patient, get an accurate account of the symptoms, and then turn to Allen's *Compendium* of peculiar and universal symptoms, or to keynotology for a remedy that from the tincture to the one-hundred thousand dilution cures the victim from the toxic ferment. Do they study the ferment itself? Do they examine the walls for cryptogamic plants, the atmosphere for sporules or floating debris of animal life? In other words do they investigate the local cause of disease and apply the remedy? Yet whole families have often been swept away by the same disease in the incredible space of a short week. When that occurs,

gentlemen, let us not, like the illogical hypocrite, hide our ignorance behind "inscrutable providence," for a sanitarian will tell us that we are criminal ignoramuses. When that occurs think, gentlemen, of the impotence of your pills!

When the luxuriant vineyards of Italy and France wilted and died from an uncomprehended cause the world stood aghast, the farmer bewailed his ruin, the rich looked with gloom on the empty chalice on his hospitable table, but the scientist pondered. People and government applied unlimited means to discover the cause and the cure. When the rot infected the potato, when the locust invaded and laid bare the Western fields, nothing was left undone to arrest the evil. The physicists of Italy and France soon found that an animal was destroying the vineyards, the phylloxera, an indigenous American insect then known in America. Valuable insecticides were found and applied, and the vineyards are now comparatively protected. The potato-bug and the locust are also fought with all the vigor, ingenuity and science that man possesses. Millions of people are engaged in that sanitary work, yet how few in the prevention of human disease! Whole countries have been depopulated by invisible animalculæ and germs, the plague, the yellow-fever, the cholera, the small-pox, have for a thousand years done their work of destruction, and yet sanitary science is the object of but few. If the government had arrested every physician in New Orleans, Memphis, Albany and other places where the devastation was permitted to occur, and condemned them to life imprisonment, it would have done an act of justice. If the government would do the same to the physician who allows three or four cases of scarlet-fever, small-pox, diphtheria or any other infectious or contagious disease to occur in the same household or in one neighborhood, epidemics would cease. If the forty thousand or more physicians in this country were engaged in the prevention of disease, man would probably reach his threescore and ten, and your hospitals and dispensaries, of which you are so unjustly proud, be closed.

Now I enter a chamber with solemn tread. Therein is a beautiful girl reclining on a sofa, and she gives the hand of welcome to her physician. Her eyes are lustrous. A face on

which no sorrow has marked its path. A countenance that reveals an unsullied mind, a trusty heart. The bending of her figure shows where nature has been prodigal in her gifts. A creation in fact that entrances the intelligence of man for "a beautiful woman is the loveliest creation of God." You look around her room and find that the hand of love has been busy. Every trifle in that room is a speaking token of attachment. She has but a slight cough and she does not complain. Heavy curtains hang from her windows, and a loving hand has drawn them close that a breath of air may not touch her. A rich, heavy carpet is on the floor, that no sound may disturb her sleep, that no cold may penetrate the soles of her dainty shoes. A table in the centre for her favorite books, and etagères and what-nots are covered with nick-nacks, and chairs and sofa richly upholstered furnish the room. Paper, embossed with gold, covers the walls that no imperfection may be seen. Pictures to please the taste of a cultivated mind gracefully adorn the walls. A case well stocked with books stands within easy reach of the taper fingers that have made so familiar with them. There is no waste of space in that sanctuary. If a figure stands anxious behind the curtain that separates that room from another, it is not because she has been remiss in her attentions or stinted in her supplies; it is because her daughter has a cough. The solemnity of the physician bids no good foreboding; but after all he has no doubt that his pills and a *little more care* will restore the cherished girl in good health to the happy bosom of her family. His daily visits are unbroken and his solicitude praiseworthy. His arrival is looked for with anxiety and he is welcomed as a saviour. The family devotion to him increases his self-esteem, and he returns home with a sense of pride. The girl languishes more and more, and her rosier cheeks make her mother's bleach. Finally the day arrives when the physician has exhausted all his medical resources, and the girl has exhausted all her vital ones. Closer and closer the curtains are drawn until the eternal curtain drops between her present and her future. She has gone! She has vanished!

Shall we pass criticism on that physician? Had he been a sanitarian the sunbeam of Tindall would have revealed to him

that the elegant heavy curtains, the nappy carpet, the plush covers, the embossed paper, the books, the tables, the pictures, the nick-nacks, the mats, the foot-stools were all nests for bacteria, infusoria, micrococci, and places for deposits of dust, animal and vegetable matter. Is this true? Let the chambermaid come in, let her sweep and dust, and look at that atmosphere then. Would it require the beam of Tindall to detect the milliards of floating particles? Yet that girl, every time she walked, every time she moved, drew a curtain, moved a book, put on a garment, stirred that foreign substance, which found its way to her lungs sore and diseased. All the wisdom of that physician was in his little pocket-case, while life-destroying agents were floating in the air she breathed. Had he ordered those curtains down, the carpet taken up, the velvet furniture removed, all books and useless articles put out of the room, the windows thrown open to the air of heaven, that girl's chances of life would have increased a hundredfold, and she might have been spared to her doting parents. If Tindall has filled with bacteria his sterilized emulsions by exposing them to the air in a hay-loft in the Alps, what must have been the condition of that girl's room where persons constantly inhaled animal matter and carbonic acid gas? Niemeyer says that a party who occupies a room for hours, breathing the same air, might be compared to a party of bathers drinking the water in which they bathe. Sanitary science hence is not the study and labor of the specialist, but should be that of every practicing physician.

Hygiene obeys the behests of physiology. Science and philosophy go hand-in-hand in the noble work of revealing cause and effect. Physicians can no longer afford to ignore their teachings. In olden times hygiene was an haphazard attempt to prevent certain effects without understanding the causes. Now scientists and sanitarians explain to you the cause, and offer you the remedy. But sanitary science is a study of great depth and immense vastness. Just think: air, clothing, dwelling, ventilation, drainage, quality of soil, heating, lighting, food, drink, bathing, gymnastics, and their relations to health; the collection and removal of refuse matter, the prevention of obnoxious trades and manufactures, sanitary condition of schools, theatres, churches, public

halls, asylums, hospitals, prisons; modes of contagion and infection; disinfection; the disposal of the dead.

Pettenkoffer says: "It is not sufficient to build up correctly a series of hygienic truths which might be the work of a few; these truths must be brought to bear upon life, and this requires instruments. Three professions are in real life the natural trustees and representatives of the hygienic interests of the community, physicians, architects, and engineers, and also the public administration. There must be harmonious action among them; good intentions are not sufficient; there must be knowledge and power."

On the other hand, let us not forget that organic nature is not made to die at every atmospherical vicissitude; for these very changes that often threaten even life are but natural convulsions to re-establish harmony among the forces that sustain life. And in these convulsions man is not always made to die. The life of every organized object is supplied with the power of resistance, with the power to accommodate itself to changes and live. Let us not think, therefore, that every cold would kill our patient, and presume that the administration of our pills is the standard that bears the motto, "In hoc signo vinces;" for it would be less quixotic to plunge our steed into a flock of sheep and dream of victory, than to cry glory in presuming to avert a fatal danger that does not exist. Many a Quixote exists even among us who wears feathers never earned, who claims success as his own while nature has done the work. He may even get his friends to believe him, for presumption is aggressive, but try him when the violence of cause is real, and populations are laid low by disease and death. If he is not a sanitarian, he will never rise equal to the occasion, and his people will die with his consent. It will be useless to turn to him for salvation; his very presumption will prevent other men more useful from coming to the surface, and thus will he more than ever add to the general destruction. Will he know how to remove the accumulated filth of a town without exposing larger fields of miasmatic germs? Will he know how to effectually arrest fermentation? Will he know how to prevent the diffusion of sewage gas in that atmosphere already laden with the germs of disease? Will he know what a

sewer is, and what are the gases evolved therein? His materia medica will be but a blank chart in that field of death; like the Austrians at Solferino he will rest on his arms, and philosophically receive the deadly bullets from the longer range of Napoleon's guns. He may die at his post like a brave man, but on his tomb will be written, "Felo de se."

Diphtheria is a deadly disease. We will not join those pathologists who believe that diphtheria is caused primordially from deposits of fungi or bacteria on the mucous membrane of the fauces, but we do acknowledge that when an inflammation of the fauces occurs, and this septic matter is deposited on the denuded surface, a development of foreign life occurs that is destructive of the membrane, and, becoming absorbed, finds food for further development in the system until it is thoroughly poisoned by the fermentation or by the prolific reproduction of these foreign bodies. The studies of Pasteur, Bastian, Tindall and others have not been in vain. In their investigations to prove or to disprove spontaneous generation, they have discovered that the air of inhabited rooms of cities and unhealthy localities is laden with parasites and fungi, apparent only to the microscope or to a powerful crossing ray of light; animations which only want a nest and a pabulum for the development of myriads of organizations. The heat and moisture of our body favor this development, and it is not strange, therefore, that every one exposed to the condition of such an atmosphere should become more or less poisoned, the degree depending only in the individual constitutional power of resistance. The young, being more deficient in that power, succumb with greater certainty.

These studies have led surgeons to the adoption of an antiseptic treatment, and Lister has led the van in driving that hospital terror, the gangrene, from its richest harvest. Mr. Lister, to prevent those organisms from falling and finding food on the wound, protects the wound in a manner that impedes access. He washes his instruments, his ligatures, his bandages in antiseptics before applying them. He is very minute in every detail of this mode of prevention, and the results are that no gangrene occurs now where before it was the terror of the surgeon.

What a revolution modern hygiene has brought into the surgical

field! Let the same be enforced in the sick-room where typhus, small-pox, yellow and scarlet fever, croup, and diphtheria inhabit, and the same happy results will reward the physician.

Papillon says: "Our atmosphere is the receptacle for myriads of germs of microscopic beings, which play an important part in the organized world. Penetrating agents of decay, baneful toilers of disease, they lie ever in wait for the chance to pierce the internal machinery of animals and plants, and create slight or grave disturbance within it. Life often resists or escapes them, but nothing can contest with them its deserted vesture."

Davaine almost upset the gravity of the French Academy when he demonstrated that one drop of blood from an animal infected with septicæmia has the power of imparting the infection to another animal inoculated with it; that a drop taken from the second can transmit it to a third and so on. The ghost of homœopathy stood before them, and they were more frightened than Macbeth at the appearance of the ghost of Banquo. But when it was explained that this is due to the prodigious power of reproduction and multiplication of these beings, and not to the dynamic power of the poison, their dignity was restored, and they were happy.

Antiseptics are agents capable of destroying germs and arresting fermentation, and since the lessons of Pasteur these agents have been sought everywhere from everything. Phrenic acid, the alkaline sulphites and hyposulphites, borates and silicates of potassa and soda, the acetate of potassa, etc., have come into use. Papillon also adds: "This is one of the most certain acquirements of modern science, one of the most important from the point of view of natural philosophy, one of the most productive for those arts that are concerned in improving the condition of mankind."

Leuwenhöck, in the middle of the seventeenth century, was first to reveal the microscopic world of the air, and to conjecture its momentous functions.

Sanitary science searches in every realm of nature for means of preserving life. Professor Maury, the eminent astronomer and scientist, when, years ago, in charge of the Washington Observatory, became so anxious about the paludal emanations

from the deposits on the north side of the Potomac, at the very foot of the hill upon which the observatory is erected, that he caused to be planted the Helianthus arnicus (the sun-flower) in great number, hoping thereby, by the extraordinary absorbing power of this plant, to protect his station from the invasion of the deadly malaria. Now the Eucalyptus globulus towers above other vegetables as a candidate in sanitary practice. It is a tree that grows to gigantic proportions with great rapidity, and becomes easily acclimated. On account of its rapid growth it is considered a good drainer of the soil. Where planted it is considered a preventive of malaria. The Maremme of Tuscany have only become habitable after the free planting of the Eucalyptus. A military post in Algeria was considered so unhealthy that its garrison was changed every week. They planted sixty thousand of these trees, and now the post is comparatively healthy. Dr. Curnow, of London, professes to have cured intermittent fever with the tincture of Eucalyptus globulus. It exhales an odor of turpentine, and is supposed to generate ozone.

Hygiene has also corrected the error that trees purify the air by the absorption of carbonic acid and the evolution of oxygen gas; for it is proven beyond controversy that the presence or absence of trees does not perceptibly alter the proportions of these gases in the air. Boussingault found to his surprise that carbonic acid in the air of Paris was rather less than in the forests of St. Cloud. Roscoe found no more in Manchester than in country stations. Schulze, Rostock, Wolffhügel, and Pettenkoffer found the same result in Germany, Verver in Holland. The salubrity produced by vegetation, modern sanitary science teaches, is due to its power of retaining the moisture of the soil, of absorbing carbonic acid and other deleterious matter from the earth, and to its shade preventing too quick evaporation. In India, as on the plains of Rajpoor, districts barren of vegetation have been subject to terrible visitations of cholera, and English garrisons now seek the shelter of wooded localities. In Bavaria scientific investigations have induced similar conclusions. The same may be said of ozone, for ozone is not found to abound where vegetation flourishes.

Since the discovery of ozone by Schönbein this electrolitic

oxygen has been studied by sanitarians, yet they have arrived but at negative results. It is still believed, however, that to ozone is greatly due the healthfulness of the air, and Pettenkoffer goes so far as to say that were it not for ozone, which oxidizes the atmosphere from organic matter, the air would long ago have been filled with the vapors of decomposition.

Modern sanitary science has greatly advanced in investigating the impurities of the air, the origin of these impurities, and the modes for their abatement.

Carbonic acid gas, in certain proportions, is very fatal to life; hence great attention has been given to it by sanitarians.

It is estimated that two volumes and a half of this gas to ten thousand volumes of air are innocuous. In the mountain air the proportion of this gas is 3.36; in thickly populated cities, as London, it reaches to 4.75; and Dr. Angus Smith found that during a fog it will rise as high as 6.79. During fogs the motion of the air is very limited, and at such times in cities where manufacturing is carried on in a large scale, and large quantities of coal are consumed, it has reached to the maximum of 8.00. When the atmosphere carries such a proportion of carbonic acid gas one can hardly fail to experience a disagreeable oppression; how must it then be in crowded or closed rooms where it is often found in the proportion of twenty-five volumes! It must not be forgotten, also, that carbonic acid is formed at the expense of oxygen, and that, therefore, the latter decreases in proportion as the former increases.

The presence of carbonic acid and organic matter in the air is generally detected through the olfactories, and, coming from the outside, the air in the room feels "close" and "stuffy."

But you may justly inquire, How are we to constantly test for these proportions? The method of Angus Smith will answer your purpose. In a ten-and-a-half-ounce bottle, perfectly clean, pour half an ounce of clear lime-water; shake the bottle so as to mix the water with the air; if there be no precipitate you may be sure that the air contains less than 6. to 10.000 volumes of carbonic acid, and is therefore good enough for breathing purposes. If any precipitate is seen you need not go any further; that room wants ventilation.

Let us not forget also, gentlemen, that gases are subject to the law of diffusion, and that they do not obey the law of gravity; for, were it otherwise, one gas would lay upon another, and several strata of gases would lay upon the earth's surface, to the great detriment of life. Heat, moreover, expands gases, and causes them to lighten and rise in the atmosphere. The rates of diffusion of gases are inversely proportional to the square roots of their relative weights. Gases of different specific gravity will not remain separate, the lighter is not allowed to float on the heavier. As soon as they are placed in communication they mix until a perfect equilibrium is established among themselves, and they are such elastic bodies that, like an omnibus, there is always room for more, each however, like men and women, maintaining their integrity and identity.

Applying this law to sanitary practice we can understand that isolation is not perfect so long as there is a chance for these gases to mix, that one will ascend or descend in spite of specific gravity, and that the altitude of a room is no safeguard to a lower room if there are left means of communication.

The proportion of carbonic acid in the atmosphere is in volume 1 to 2500. An adult will exhale fifteen cubic feet of carbonic acid in twenty-four hours. When the proportion of this gas rises to 50 to 1000 cubic feet of air human life is extinguished. Yet in the bed-room of the sick you find probably one or two attendants, a fire and a light. The fire consumes oxygen and gives out carbonic acid, carbonic oxide, sulphurous compounds, etc. It is estimated that one pound of wood requires one hundred and twenty cubic feet of air for complete combustion. Coal-gas consumes from six to eight cubic feet of oxygen to every foot of gas, and produces two feet of carbonic acid gas, and from two to five grains of sulphurous acid. Oil in combustion will consume about three feet of the oxygen of the air, and produce a foot of carbonic acid; and this is the case with all the hydrocarbons.

Pettenkoffer and other scientists have laid down that an adult requires three thousand feet of pure air, supplied every hour, in order to maintain the atmosphere of a room of the area of a thousand square feet in a normal state of purity.

These studies should be well considered by all physicians who claim to treat the sick in an intelligent manner, and who have sufficient love for their fellow-beings as to have an interest in the preservation of their health. Of course, in a paper like this, brief as the circumstance under which it is delivered requires, these subjects I can only mention in a cursory manner.

In the field of sanitary science modern practice has achieved a great work in the discovery of many valuable disinfectants. These disinfectants are divided into classes.

1st. Those which chemically destroy or effectually restrain the contagious and infectious virus.

2d. Those that arrest chemical changes and check the fermentive process, called antiseptics.

3d. Deodorants and absorbents; agents that destroy putrid exhalations and *physically* restrain noxious compounds.

These principles are laid down in every sanitary work, yet they are seldom understood by the unpracticed sanitarian. Charcoal, lime, and permanganate of potash do not hinder the putrefactive process, but facilitate it. Danaim found that treatment with charcoal increases the poisonous qualities of putrid blood. Permanganate of potash has no effect on living organisms, while cresylic acid destroys all animalcules. It is also commonly supposed that any agent that destroys a bad smell renders the matter harmless. This is an error; for while the gases exhaled from putrefaction may be mechanically retained by this agent, there is no chemical change and fermentation continues. Moreover, these absorbents are limited; when they are once saturated they allow the gases to escape.

To the first class belong heat, nitrous acid gas, sulphurous acid, bromine, iodine, sulphate of iron, sulphate of zinc, chlorine and ozone.

To the second belong nitrous and sulphurous acid gases; carbolic, cresylic and salicylic acids; chloride of zinc, chloride of iron, chloride of calcium, chloralum, bromo-chloralum and sulphate of iron.

To the third class, namely, agents which act partly by absorbing moisture, partly by condensing gases, and partly by a peculiar action on organic matter analogous to tanning, belong dry

earths, clays, charcoal, quicklime, and the artificial compounds of aluminum.

Sulphurous acid is considered one of the most useful of these articles in the disinfection of rooms and clothing. This is an old disinfectant that has done good service in disinfecting from small-pox, scarlet fever, diphtheria, cholera and low forms of typhoid fever. The old crude system of burning the flowers of sulphur on a heated iron is now replaced by a more elegant, convenient and controllable method. Take the bisulphide of carbon, which is a liquid compound of two atoms of sulphur to one of carbon, and place it in a spirit-lamp with a wick. It burns rapidly like alcohol, it makes a blue flame, and the smell of sulphur becomes quickly apparent; the carbon is burnt in the flame, and the sulphur is left free, which, becoming attacked in its incandescent state by the oxygen, sulphurous acid is generated. If it is desired to reduce the quantity of sulphurous acid, but to continue its generation, it may be mixed with oil and burnt in a common oil-lamp. The bisulphide of carbon is very volatile, and should therefore be kept closed with a well-fitting glass-stopper. An excess of this gas is quickly detected by its irritating effect on the mucous membrane of the larynx, causing cough. The apparatus is very manageable and may be always at hand, and put in operation at any time by the application of a lighted match.

I do not intend entering the arena as a champion of the germ theory of disease. I know full well that great authorities differ on this point, yet I know that no sane man would deny contagion or infection. Virchow, Pettenkoffer, Tindall, Sanderson, Roberts, Richardson and others, may differ as to the mode by which septicæmia, pyæmia or contagion invade the system, but none differ as to the modes of prevention. Virchow, for instance, believes that typhoid fever is principally due to the use of contaminated water, while Pettenkoffer believes it is due to the rise and fall of ground water, and both differing as to the power of transmission of this disease, but all agree in the infection by sewage gas and sewage deposits.

The Board of Health of Washington orders an investigation into the local cause of all zymotic diseases, and applies the

remedy with promptness and success. It is not in the power of even this board to suppress all causes of zymosis, because its authority is limited by a higher authority. But I dare say, that had it all the power that should be invested into such a board, zymotic diseases would be of rare occurrence in the capital.

I will close this lengthy paper and relieve your patience by relating to you what occurred in Lancashire in 1876. Of fifty-seven families who reside in that borough and who were supplied with milk by one dairy, fifty-five were attacked by enteric fever. Many were the speculations regarding the cause of this malady. The milk was put to a searching test; every means were adopted to prove it guilty. Nothing was found. The cause was then traced to a stream within which were deposited the excrement of the town. It was then found that the dairy farm, from which the suspected milk came, depended for water on that stream. Dairymen were never accused of watering their milk; but in this instance both the water and the milk seemed to have something in common; certainly, at least, as to their disease-producing properties. A suit was entered for divorce, they were both native citizens, the suit was not on the plea of separation, and neither complained that the other had left its bed and board, yet that all-powerful judge, public opinion, declared a divorce a vinculo matrimonii, and there have been no more issues from that pair. The enteric fever disappeared, as if by magic, and the borough is living and prosperous still.

If any of you have any scruple about divorce, here is one instance in which we can all agree, and this being the case, so unusual among doctors, I dare not utter another word.

VIII.

THE HYGIENIC PREVENTION OF ZYMOTIC DISEASES.

By Thomas Moore, M.D., Germantown, Phila.

The zymotic diseases are those morbid affections which are produced by the deleterious effects of matter in such exceedingly small quantities that it has been supposed to act on the system like a *ferment*. In accordance with this supposition the term "zymotic" has been applied to the class of diseases thus designated. The idea, however, that the process of fermentation is thus excited in the system is not universally entertained.

The substance of these subtile causes of disease may consist of imponderable and invisible particles of matter from either the animal or vegetable kingdoms, or they may possibly be derived from the inorganic world. Exhalations from poisonous plants may impregnate the atmosphere, or fungi and infusoria may be carried by the winds. These *semina morbi* may be parasitic in their nature and microscopic in their size, such as the *vibriones*, *bacteria*, etc. Effluvia from stagnant water, consisting of particles of decaying vegetable substances, or putrid matter from decomposing animal structures, mephitic gases, or foul odors of filth from various sources, may pollute the air. Besides these, the emanations from bodies affected with contagious or with infectious diseases having the specific power to reproduce the same form of disorder, may also, with those just mentioned, be included among the exciting causes of zymotic diseases.

The acute exanthemata, diphtheria, typhoid fever, yellow

fever, and other malarious and typhus fevers, together with various forms of disease supposed to arise from the above or like causes, are embraced under the classification of *zymoses.*

With a view of ascertaining the nature of these germs of disease, and with a hope of thus being enabled to obviate their injurious effects, the attention of the medical profession, especially of those interested in the subject of sanitary science, has long been engaged. Their investigations, however, have added but little to our knowledge of the means of preventing the diseases thus produced. Their efforts have been directed mainly to "the removal of the causes," as the chief or only means of prevention. This certainly would be the most effectual if it were really possible, but from our limited knowledge of the actual nature of these causes, from their infinite variety, and from our ignorance of their *modus operandi,* that course is not always practicable.

While recognizing the expediency and wisdom of all precautionary measures, it is believed to be possible to prevent zymotic diseases by establishing a condition of the system which will be capable of resisting the action of their exciting causes, over which, it must be admitted, we have otherwise but little control.

There can be no doubt of the fact, viz., that a perfectly nourished system will resist the effects of morbific agents better than one made weak by insufficient or improper nutriment. Famine is followed by pestilence as an inevitable result, and the poor and ill-fed are generally more liable to disease than those who are in better circumstances and more efficiently nourished.

The action of zymotic causes of disease is conditional. In a community where all are alike exposed to the influence of these causes we know that many are entirely exempt from any injurious effects, while among those who are affected some suffer much more severely than others. This exemption and difference in severity under precisely the same condition of exposure to the causes of disease are usually attributed to *idiosyncrasy,* although it is not clearly understood in what this constitutional peculiarity consists. We have no proof that the difference of affection in different persons is owing to the greater quantity, strength or activity of the disease-producing agents at one time than at

another. We must, therefore, believe that their power to produce zymotic disease depends upon the degree of receptivity of the system, or, in other words, of the pre-existing condition of susceptibility.

The operation of zymotic causes in producing disease is strongly analogous to that of the attenuated drug in curing it, and presents an argument in favor of the attenuated dose which is unanswerable. Like the attenuated drug, which, under certain appropriate conditions, will cure disease, the imperceptible zymotic matter, under other special conditions, will produce disease. The zymotic, imponderable atom, like the attenuated dose, although neither may be appreciable by our senses, has its innate *force* or "mode of motion" peculiar to itself. It is this disease-producing *force*, belonging to the zymotic matter, which renders it capable of so disturbing the human life-force as to produce its characteristic morbific effects. It cannot be by any perceptible material action that the morbific impression is made upon the organism, for if it were by any means possible to divest the zymotic substance of its disease-producing properties, or, in other words, to annihilate its peculiar noxious *force*, the matter itself, in the imponderable or inappreciable form presented, would be entirely harmless in its effects upon the system. Neither would the attenuated drug produce its curative effects if its *medicinal force* was inert and not surely present, and demonstrable in the curative results produced by even our highest attenuations.

The principle of *self-preservation* is not limited to the external and voluntary efforts of the being in warding off the action of perceptible causes of disease or injury, but extends also to the instinctive and unconscious operations of the organism in resisting the impression of morbific influences, the presence of which may be known only by their injurious consequences. This is recognized and acknowledged as *the power of vital resistance*, through which the healthful integrity of the system is ordinarily maintained, and the vital energy *instinctively* enabled to withstand and overcome the impression made by such agencies. If it were not for this power of vital resistance none would be exempt from these morbific influences, and all would be equally affected by them.

For the operation of all violent and active causes of disease which are suddenly destructive or overwhelming in their nature, such as those of a mechanical character, or of drugs and chemicals in poisonous doses, or of those causes which produce their morbific effects by reason of their great virulence, such as animal virus or the bites of venomous animals, etc., susceptibility of the system is not such a pre-existing necessity or essential condition as it must evidently be for the operation of those causes which are purely *dynamic* in their character, and which, like those that produce zymotic diseases, act independently of any *appreciable* substances.

Susceptibility, as an essential condition of the curative power of the attenuated dose, exists in the system *solely as an effect of disease*, the attenuated drug being capable of producing its curative effects only when such a diseased condition is present. This susceptibility is recognizable by the *similarity* of the morbid symptoms manifested in the individual patient, when compared with the medicinal symptoms which have been produced by the proving of a drug on the healthy organism, to the impressible influence of which particular drug the patient at the time, *because of disease*, is most acutely sensitive, even when the drug is administered in doses so inappreciable in quantity as to be incapable of producing the slightest apparent effect upon a *healthy* system.

Susceptibility, as a pre-existing condition for the operation of zymotic causes of disease, exists in the system as an ordinary result of *defective nutrition*. It is, in fact, a well-known axiom, that if the body is not properly and completely nourished the vital energies will be depressed, and the power to resist disease consequently diminished. The susceptibility of the individual is inversely proportionate to the power of vital resistance, of which power there is greater or less activity according to the degree of healthy physical development of the organism.

Admitting, then, this state of susceptibility to be a prerequisite condition for the operation of the zymotic causes of disease, and believing it to depend upon pre-existing physical degeneracy, with consequent depression of vital energy and loss of resisting power, it becomes obvious that the prevention of zymotic diseases is

greatly and essentially, if not entirely, within our control, and that the most certain and efficient means of prevention (when the causes cannot be removed) must be those of a hygienic character.

The first object of the science of hygiene is the preservation of health; and the important principle which underlies all its teachings is the attainment of the highest degree of healthy physical development, with the view of obviating the effects of morbific agents. To this end hygiene takes into consideration all those various means of promoting health and of averting disease which reason, observation and experience have pointed out, but which, unfortunately, are often sadly neglected through want of knowledge of its principles or inattention to its rules. It inquires into our habits of life, our mental and moral emotions, the quantity and quality of our food and drink, the regularity of our meals, the ventilation of our dwellings, the avoidance of exposure to atmospheric changes, our dress, sleep, exercise, and various other matters relating to the preservation of health.

While it is doubtful whether such a perfect state of healthy physical development is attainable, or such a perfect degree of health can exist, that as a consequence there shall be an entire immunity from all *extrinsic* causes of disease, yet we can readily conceive the possibility of developing such an approximation to that high grade of physical perfection in which the system will be enabled to resist the effects of at least all *external dynamic* causes of disease. But to this end the teachings of hygiene are almost valueless, unless we more clearly understand the relation of the principles of nutrition to the necessities of the system, occasioned by influences to which it is subjected, and to which reference will presently be made.

While the usual classification of alimentary principles into the *organic nitrogenized, organic non-nitrogenized* and the *inorganic* is accepted, it might be advantageous to make another more simple and general division of nutritive substance into PRIMARY and SECONDARY FOOD. This will certainly be a natural division that all can easily understand.

By *primary food* is meant all nutritive substances obtained *directly* from the earth, such as the cereal grains, vegetables, including the leguminous roots, leaves, seeds, fruits, etc.

By *secondary food* is understood all aliment which has become secondary in its character by having undergone the change from its primary nature through the vital action of animal organisms. This includes the flesh or other parts of animals used as food, and those articles of nutriment which are the products of animals, such as eggs, milk, butter, cheese, etc.

A great error undoubtedly exists in the public mind in regard to the relative value of these two kinds of food, it being the general impression that aliment of the secondary division is, ordinarily, much more nutritious and far more important in developing a healthful condition of the system than that of the primary character. It is well known that, under certain conditions, life may be sustained and health preserved upon an exclusive diet of secondary substances; but under other circumstances, which it is the intention to show, it is absolutely necessary to supply the system with a very large proportion of primary food, in order to develop such a healthy physical condition, as will be capable of resisting the causes of zymotic diseases.

The Creator, in his wise purposes, has established principles and laws which govern all the operations of nature. These are absolute in their control, irresistible in their power, and harmonious in their action. One of these great laws is impressed upon all animated creatures (except those which are purely carnivorous, and excepting also the young of the mammalia), and operates *by changing the organic products of the earth into living animal matter.* Under this law we recognize the necessity of transforming nutritive vegetable substances into the animal matter from which the blood and the tissues of our bodies are composed. It is the failure to observe the requirements of this natural law which leads to incomplete nutrition of the body, thereby rendering the system *susceptible* to dynamic morbific influences by enervating the vital energies, and consequently diminishing the disease-resisting power.

The activity of the vital process, through which the change in the condition and form of organic matter is effected, depends entirely upon the influence of *external heat* upon the body.

The relative proportions of the two kinds of food which are actually required to develop a healthy physical condition capable

of resisting the dynamic causes of disease, must, therefore, necessarily vary according to the degree of external temperature to which the body is subjected.

With the natives of the polar regions, during the long cold winter, and from the feebleness of the sun's rays even in summer, this special vital process (through which the change in matter is effected) is very inactive or almost wholly suspended, and remains so while the inhabitants "who live mainly without fire" do not indulge in the luxury of artificial heat. Although their bodies are stunted in growth and dwarfed like the scanty vegetation of their climate, yet life is sustained by the peculiar fatty diet of secondary food, and they are thus enabled to resist the depressing effects of cold, and other causes of disease, which may there exist. That kind of food, acting in that climate as a substitute for nutriment of the primary character, has the great advantage of compensating for the lack of heat from the sun and the absence of artificial warmth, by supplying the non-nitrogenized or carbonaceous heat-producing material for their bodies which they, under the circumstances, so greatly require.

In an article read before the Biological Department of the Academy of Natural Sciences of Philadelphia, April 18th, 1859, by Isaac J. Hayes, M.D., and published in the *American Journal of the Medical Sciences*, volume xxxviii, when referring to the habits of the natives of the Arctic region, the writer says: "They subsist entirely upon animal food; the flesh mainly of the walrus, seal, norwal and bear; and the quantity which they eat seems really enormous. I have frequently seen an Esquimaux hunter eat from six to twelve pounds of meat, about one-third of which was fat; and I should place the daily consumption of the men at from twelve to fifteen pounds; and in this large consumption they find their shield from cold. I do not believe they could live upon a vegetable diet. Living virtually without fire, most meagrely dressed, and almost daily exposed to the very lowest temperature (from 30 to 70 degrees *below zero*) we are astonished at their complete indifference to cold; not only do they seem indifferent to it so far as concerns their physical comfort, but they are able to resist all of its depressing influences. They are a strong, robust and healthy race. Scurvy is un-

known amongst them, and I have never known or heard of an instance of tubercular disease."

The deduction from Dr. Hayes's article is, that when the body is not habitually exposed to external heat—as in the case of the natives of the polar region—perfect nutrition is maintained by an exclusive diet of animal substances, and also that the susceptibility to disease is so slight, that even with an entire abstinence from nutritive vegetable matter, scurvy or other morbid conditions are not induced. Now it is well known that under ordinary circumstances, that is when the system is more or less subjected to the influence of external heat, prolonged abstinence from vegetable food (especially from succulent vegetables and vegetable acids) will invariably lead to general physical degeneracy, or eventually to scurvy; while it may be here remarked that, under the same conditions, long-continued deprivation of animal food is never followed by any such consequences.

The great fatality from scurvy and other diseases among Arctic explorers is doubtless owing to the fact that they (unlike the natives of the Arctic region) live, when practicable, in close and well-heated apartments. Thus, by the action of artificial heat upon their bodies, the process of metamorphosis of organic matter is continued in active operation in their systems, creating an incessant demand for primary food, which from its natural scarcity cannot be adequately supplied, thereby inducing scurvy or else general enervation of the system, predisposing them to the various causes of disease to which they may be subjected.

In proportion to the increase of external heat upon the body, the greater is the necessity for primary food. That kind of food only can supply the natural requirements of the system occasioned by the operation of the process of transformation of organic matter, which process, as just observed, is called into activity through the influence of heat. Secondary food having once passed through that process in other animals, and having consequently already undergone the change in its original form and nature—although still retaining its animal heat-producing power—cannot be again thus acted upon, and is, therefore, unsuitable to supply the necessities of the system created by the influence of heat upon the body. While the body is habitually

subjected to the action of external heat, it must evidently be only an incomplete substitute for primary food.

In the present condition of science very little is positively known about the essential nature of *assimilation*. While the fact is established beyond a reasonable doubt that the generation of animal heat is greatly influenced by the character of the food, and that it is connected with the process of assimilation in every part of the organism where waste and renewal of tissue are going on, yet the chemico-vital changes through which animal heat is thus produced, are not thoroughly understood. It is well known that the blood supplied with nitrogenized elements conveys them to all parts of the system, and that through the process of assimilation those elements are converted into the substances of the body. But as to the intimate nature of that process by which they are thus transformed, or of the power to select and appropriate the required elements from the blood, to elaborate the various tissues, and to supply new material, or to renew the worn-out matter, precisely where and of just the kind needed, very little is accurately known.

For the growth of new structures and for the renewal or repair of the worn-out parts of the system, a constant and regular supply of *nitrogenized* material must be introduced into the body. The power to resist the influence of dynamic causes of disease must greatly depend upon the character of the organized structures formed by such nitrogenized matter; and while it is a generally assumed fact that the nitrogenized principles of primary and those of secondary food are identical as far as general chemical analysis can detect, yet, under the finer analysis of vital chemistry, there can be no doubt as to their physiological difference, and as to their difference in organizable quality or tissue-forming character. It is just here that the prevailing diversity of opinion exists as to the relative value of these two kinds of food, and as to whether we ought to receive the nutritive products of the earth into our bodies *directly*, as in the form of primary food, or *indirectly*, as in secondary nutriment.

It has been heretofore observed that in secondary food non-nitrogenized matter is abundantly furnished, and the circumstances which demand a large supply of such material have been

noticed; but it must be remembered that secondary food is also rich in nitrogenized organizable principles. The question then arises, does such food, in our climate, meet the nutritive requirements in forming the character or quality of organized structure, which will enable the vital energy to resist the effects of the morbific influences we are considering? If we were purely carnivorous in our nature, or constantly exposed to great cold, secondary food would be undoubtedly suited to our organic necessities, in fact we would be unable to live upon primary food. But the character of our digestive organs, especially of our *teeth*, shows that we are only to a limited degree anatomically adapted to an animal diet. Such food can, therefore (except when the body is deprived of external heat), only be suitable in proportion to our carnivorous nature, and when used to excess, or in undue proportion, and to the exclusion of primary food, while living under the influence of external heat, the laws of our nature are transgressed and physical degeneracy, with its consequences, is the result. For carnivorous animals secondary food certainly contains all the essential elements of nutrition needed. Their nature requires their food to be prepared for them through the intervention of other animal organisms. "After being digested it is at once converted into blood, and enters directly into the formation of their tissues. The power to change vegetable substances into animal matter does not, to any extent, exist in their bodies." But for human beings, upon whom is impressed the law of nature requiring them to directly effect this change in the character and form of organic matter, and in whom the special life-process through which that change is accomplished must be constantly exercised under the influence of external heat, secondary food cannot furnish the proper kind of nitrogenized material to form the quality of tissue essential, in our climate, to the development of disease-resisting power.

While the defective generalizations of the vegetarians, or those of the Grahamites, cannot be accepted, as they fail to take into consideration the absolute necessity of animal food when the body is deprived of external heat, and as they also disregard the fact that some of our teeth are analogous to the general character of the teeth of the carnivora (showing that we are par-

tially adapted to an animal diet), yet it must be admitted that when living under the influence of external heat, if from choice or necessity we should abstain from all secondary food, every nutritive requirement would be amply supplied by primary food. The non-nitrogenized substances, sugar, starch and the vegetable oils, would be sufficient to maintain the animal temperature, while the nitrogenized principles, vegetable albumen, vegetable fibrin, vegetable caesin, and others, together with the inorganic matters of primary food (vitalized by passing through the vegetable structures), would abundantly and completely furnish all the nutriment essential to the proper organization and sustenance of the body, and consequently suited to the development of the highest degree of healthy physical perfection, and the greatest power of resistance to extrinsic morbific forces. The eminent physiologist and chemist, Liebig, remarks that "the most recent and exact researches have established the fact, to which nothing yet known is opposed, that the nitrogenized constituents of vegetable food have a composition identical with that of the constituents of the blood."

Although, as previously remarked, very little is known concerning the actual nature of assimilation, yet it is a rational hypothesis that the organized structures of the body, formed by nitrogenized matter in the original purity and form of primary food, are more perfect in their histological and physiological character, and hence better suited to increase the vital energy and to give the system greater power of resisting disease, especially when living under the influence of external heat, than the tissues developed by nitrogenized matter from secondary food, such food having undoubtedly lost some of its originally nutritive qualities in previously passing through other animal organisms.

As omnivorous beings we are, unquestionably, adapted to a mixed diet, and the necessity of variety in our food is quite obvious. But in a mixed diet, with great excess of secondary food, and consequent insufficiency in the quantity and variety of primary substances, we can never, while subjected to the influence of external heat, approximate that high standard of healthy physical development in which there will be an immunity from

the exciting causes of zymotic diseases. To attain this desirable state the introduction of nutritive matter of the primary character *directly* into the system is most imperatively demanded. And such food is as constantly and as absolutely required to develop disease-resisting power in those living under the influence of external heat, in warm or temperate climates, as the substances of secondary food are to maintain the internal or animal temperature in those who are deprived of external heat, and are living in the colder regions of the earth. In our climate, where we are exposed to the heat of summer, and where we habitually live in heated apartments in winter, with the law of organic change constantly demanding a supply of suitable material for its vigorous exercise, a positive necessity exists for a much larger proportion and more constant supply of primary food than is generally used. An exclusive diet of primary food under all circumstances is by no means advocated, but it is argued that the quantity of primary food should always be *proportionate to the external heat* to which the body is subjected.

We have seen that in the polar region, in the absence of external heat, life can be sustained and health preserved upon an exclusive diet of secondary food; and it is well known that under the excessive heat of the tropics, where nature in her luxuriant bounty provides the greatest abundance and variety of primary food, the healthful processes of life are best carried on by an almost exclusive diet of succulent vegetables and acid fruits. In either extreme of latitude and temperature, the instincts of the appetite suggest the appropriate food to supply the necessities created according to the degree of influence of heat upon the body. As in the Arctic region secondary food must be used exclusively, so, under the torrid heat of Hindoostan, primary food furnishes all the nutriment required. There the diet of the natives consists of rice and fruit, and abstinence from animal food is absolutely insisted upon as a religious duty.

During the heat of summer, in a temperate climate, secondary food may be almost if not entirely dispensed with, and a healthy condition of the system, together with the greatest power to resist morbific forces, would be maintained upon a diet (in accordance with our instinctive desires) consisting mainly, if not exclusively,

of the nutritive products of the earth. In the winter, if we were obliged to live constantly under a low temperature, secondary food would be (as it is for the natives of the Arctic circle) undoubtedly our proper diet. But, unfortunately, like the northern explorers before referred to, we sacrifice the power to resist disease to the comfort of our bodies, by living in apartments often greatly overheated, upon a diet very largely composed of animal substances, and without the slightest regard to the relations of artificial heat to the nutritive processes of life and health. With the temperature of our dwellings in winter often greatly above summer heat, we stimulate the process of life concerned in the change of organic matter to nearly its utmost activity, and entirely forget the necessity thus created for almost, or, perhaps, quite as much primary food in winter as that required under the natural heat of summer.

In regard to infants before and during dentition, who, until the process of teething is completed, have not the natural ability of transforming primary food into their blood and tissues, *the relation of external heat to nutrition* should be also noticed. When infants are restricted to a proper allowance of milk from the *healthy* nurse, which at that period of life is their only natural diet, they are notably exempt from zymotic diseases. In order to maintain a healthy condition of system in the nurse, the most careful attention should be given to her diet, which should, of course, be regulated according to the external temperature to which she is habitually subjected; and to secure an ample supply of wholesome milk for the nursing child, especially during the heat of summer and the prevalence of summer diseases, the diet of the nurse should consist mainly of primary food.

But even with the most natural and appropriate nutriment for infants, if given in too large a quantity or too frequently, while, either in winter or summer, they are exposed to excessive heat, susceptibility to the dynamic causes of disease will be undoubtedly induced. There can probably be no more certain cause of *cholera infantum*, and many other infantile diseases, than the too frequent feeding or overfeeding of infants with secondary food while they are subjected to the extreme heat of summer.

We have thus endeavored to show that the action of the ex-

citing causes which develop zymotic diseases, like that of the attenuated dose, although inappreciable in quantity is purely *dynamic*, and that neither the one nor the other affect the system in such infinitesimal quantities, unless there be a pre-existing condition of *susceptibility;* that the susceptibility to the attenuated dose is induced by existing disease, while the susceptibility to zymotic agencies is the result of physical degeneracy, caused by imperfect nutrition; that the power of vital resistance to disease-producing forces is dependent on the healthful integrity of the organism, and that susceptibility to such forces is inversely proportionate to the power of vital resistance.

The law of nature which governs the change of organic matter from its vegetable condition into the animal form of life has been referred to, and especial attention has been invited to the accompanying fact, that *external heat* acting on the body excites or stimulates the process of life through which that great change in matter is effected. The conviction has been expressed that a neglect to comply with the requirements of that natural law (which requirements are necessarily occasioned by the action of external heat) produces physical degeneracy and consequent loss of power to resist morbific forces.

A most obvious, simple and natural classification of alimentary substances into primary and secondary food has been also suggested; and it has been shown that in the *absence of external heat* the system may be most efficiently nourished and health preserved by secondary food exclusively; while it has been argued that in proportion to an *increase of external heat* is the natural requirement for a diet of primary food.

An opinion has been expressed that notwithstanding the apparent identity of the nitrogenized principles of primary and secondary food, there is nevertheless a *biological* difference (which ordinary chemical analysis fails to detect) which consists chiefly in the quality or character of the organized structures formed by primary and secondary food respectively; that it is reasonable to assume that the organizable animal matter formed from the nitrogenized principles of primary food is better qualified to develop the disease-resisting power in the system (especially when the body is exposed to external heat) than that produced

by the nitrogenized elements of secondary nutriment; and that while living under the natural heat of summer, or the artificial heat of winter in our climate, the highest degree of healthy physical development, and consequently *the greatest power of vital resistance to the causes of zymotic diseases*, can be attained only by a very large proportion of primary food.

IX.

THE VENTILATION OF OUR HOMES.

By D. H. Beckwith, M.D., Cleveland, Ohio.

Medicine is considered under two relations, as a science and as an art. As a science, it takes cognizance of all that pertains to the knowledge of the symptoms of disease. As an art, it is founded on principles and facts which have a practical value.

Its object is to prevent disease when possible.

The subject of ventilating and warming our homes is, in medicine, an art, and should be studied on general principles in a scientific manner.

The relations of fresh pure air to the preservation of health is of the utmost importance. A current of air, normal in its constituents, circulating through our dwellings, is one of the best disinfectants; while, on the contrary, an impure atmosphere may contain the germs and spores which will produce zymotic, and perhaps contagious or infectious diseases.

Air in its normal condition is a mixture composed of oxygen and nitrogen, with a small amount of carbonic acid, water and ozone. Accidentally it contains various gases and matter of different kinds in suspension. It is by breathing these impurities in the atmosphere that the danger of disease is encountered. If our homes are not properly ventilated, we are constantly breathing impure air, made so by its occupants, and by cellars and store-rooms which may contain vegetable matter undergoing decomposition.

There are many kinds of houses forming the homes of our country and city population. On yonder avenue, on a hill, or beside a lake, there is the light and airy summer home, surrounded by tall trees thick with foliage, evergreens upon its beautiful

lawn, and flowers gracing its many walks. Such houses have the sunshine, and their open windows and doors afford abundant opportunity for the passage of air and the diffusion of gases; many of them have also verandas protecting them from the heat of midday and the dews of evening. In such homes there is, of course, no lack of ventilation.

On the other hand we find the filthy tenement-houses which exist in all large cities. They are huddled close together, are many stories in height, and every story, yea, every room, is filled with tenants. These occupants are exposed to the effluvia from damp, decomposed matter, to poisonous germs floating in the dust, rotten timber and old walls overrun with vermin, and soaked with filth which has accumulated for a score of years. These homes are *not* ventilated. They are filled with stench, and are the breeding-places of disease. In hot, sultry days and nights the atmosphere becomes so polluted that the inmates themselves are often forced into the streets to obtain breathing-places. Such places ventilation cannot reach unless the health officer makes it his special duty to attack them, with the law to sustain him.

Only conflagrations, or the encroachment of blocks for business, can drive the inhabitants to other localities. The best method of reforming such people is to educate their children to understand sanitary laws.

In many of these homes live the workingmen. To this class our nation owes its wealth and power, and we, as physicians, should endeavor to have the home of the laborer of the next generation so improved that disease and death may not visit it so often.

The poisoned air from these filthy habitations is often wafted to the lovely homes of the wealthy, there to leave its pestilent sting.

If we attempt the ventilation of such poor houses, built compact and close, the whole number must be dealt with, for no amount of cleanliness or change of air in one building will accomplish any sanitary change. A single neglected spot will pollute the whole atmosphere. Dr. George Derby has truly said, "Our

own immunity from disease cannot be secured without looking after the safety of our less prosperous neighbors."

The air inside of dwellings is contaminated by the respiration of the occupants and the exhalations from their bodies; by the processes of preparing food; by the dust arising from the decay and wear of clothing, carpets, furniture and the structure itself; by gases from sewers, drains, water-closets and other vehicles for the removal of excrement and refuse; by the burning of gas and oil; by ground air, moisture and mould arising from cellars and floors; and by other foreign matter from various sources.

In order that the air be pure the dwelling must be kept clean. Successful ventilation cannot be accomplished where every breath of air or every step upon the carpet produces a cloud of dust, or when the floors, walls and ceilings are marked with cracks and seams full of dirt. The furniture, cooking-utensils, stoves, clothing and everything, inside and out, above, below and around the house, must be subjected to the exercise of eternal vigilance in carrying out a system of fastidious cleanliness.

Aside from the sources of contamination within a house, there are outside stenches and gases generated by stables, pig-sties, drains, neglected cesspools and privies, the stagnant water in sluggish streams and marshes, catch-basins of unventilated systems of sewerage, manufactories of manure, bone-dust, tallow and glue, oil-refineries, slaughter-houses, chemical acid works, etc., etc.

In order to ventilate successfully it is necessary to provide for the extraction of foul air and the supply of fresh, and to cut off from the dwelling, or remove as fast as generated, all noxious gases and foul smells.

During the summer months, when there is comparatively little difference between the temperature of the outer air and that of the human body, and there is consequently little discomfort produced by moderate draughts, the houses of the better classes may be supplied with a free circulation of air by means of open doors and windows; and were it not for such sources of impurity as water-closets, drains and sewers, there would be no need for any other than natural ventilation at this season of the year. I make this statement with a full knowledge of the fact that more air is required to take away the exhalations of the body in warm wea-

ther, and that there then exists none of those aids to natural ventilation which are offered by artificial heating used during the colder months.

But our cellars, kitchens and sewers are dangerous at all times and seasons, and their ventilation should be permanently arranged, independent of that of the rooms artificially warmed and ventilated part of the year.

The connection of house drains, as usually constructed, with the system of public sewerage, involves a great risk. That cities which spend so much money in building sewers should not apply a small proportion of it to their ventilation, shows a lack of knowledge of sanitary matters, or else a criminal neglect on the part of those who have such constructions in charge.

In the absence of other provisions, the catch-basins serve as outlets for the escape of gas in case it exist in sufficient quantities to cause any pressure, and as sometimes built they allow a free circulation of air from the sewers to the surface of the ground at all times.

To place the catch-basin of an unventilated sewer in front of any dwelling occupied as a human habitation, is an offence for which corporations should be liable.

It is but recently that the public has come to a knowledge of the danger to which we are exposed by the connection of house drainage with public sewers. But now that the people are being educated to a knowledge of the laws which govern life and health, they are becoming interested in the practical application of sanitary science and the natural laws relative to ventilation, drainage, etc.

Sewer contractors in large cities are now watched by boards of health, and the laying of sewer-pipes is much better done than formerly, but in most cases ventilation is neglected.

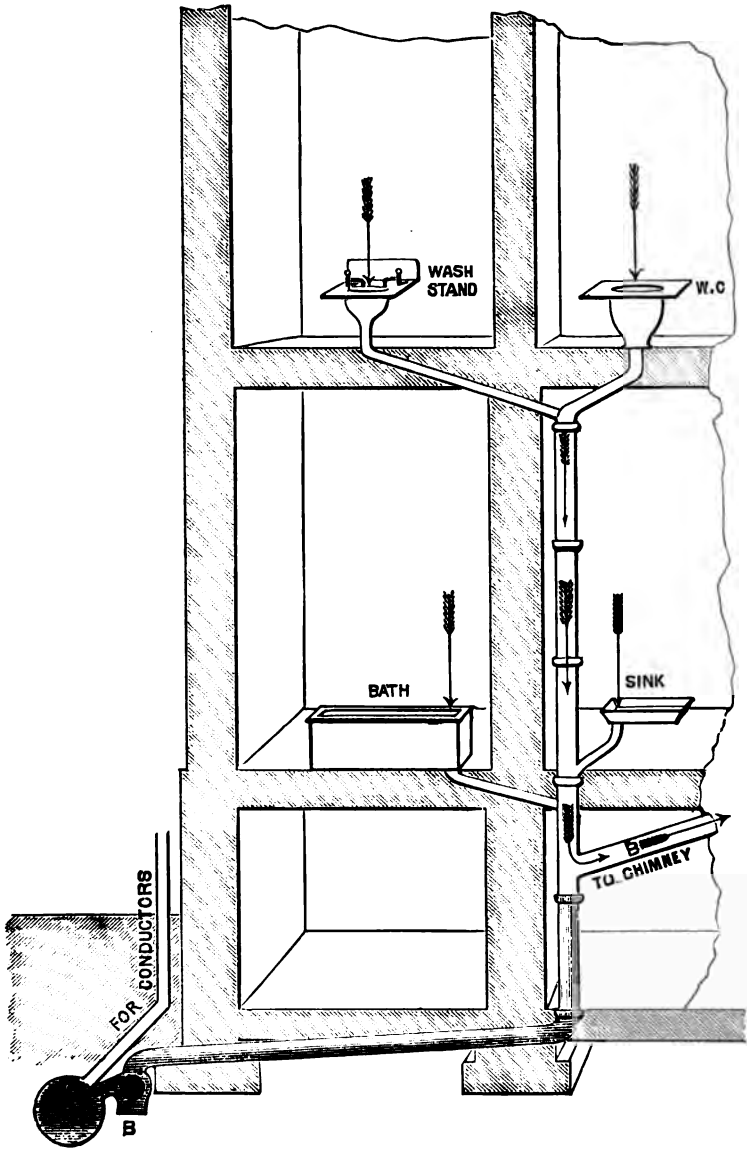
A house may be built with what are termed all the modern improvements, but the temptation to cheat by a class of mechanics called plumbers is so great, and their work is so easily hidden, that the house is often made unhealthy by poor cementing, drainage and sewerage-pipes. Stopcocks of an inferior quality are used; lead pipes of the thinnest kind; iron traps so imperfect that they will neither hold water nor prevent the free passage

of sewer gas; drainpipes so porous and fragile that they cannot be made durable and tight, and often laid without lead packing in the joints; cement used about stoneware so imperfect that it crumbles away under the action of sewer gas. With such work placed in our homes by cheap and illiterate mechanics, what can the result be but sickness and death. A case of typhoid, bilious or intermittent fever, diphtheria or spinal meningitis, arouses the occupants to their danger, and an investigation shows that ventilation and drainage are deficient.

In Cleveland our sandy soil and the lots sloping gently towards the lake make drainage from the main sewers easy, but our costly and beautiful homes, with all their sanitary improvements, have not escaped the effects of sewer gas. When the wind blows from the north, the gas is blown back and forces its way into many of the houses. Within the past year this has been remedied to a certain extent by placing stones in front of the main exits to prevent a direct current of air entering the main pipes.

Traps.—To find a trap that would prevent sewer gas from entering our homes, has been a sanitary requirement long looked for. Some months since the "Bower's Sewer Trap" came to my notice. The principle on which it is constructed induced me not only to place it in my own home, but to recommend it to my friends and patrons. The old S trap was removed in very many of Cleveland homes, and the Bower's trap placed in its place. So far as my knowledge extends the trap has given entire satisfaction in every house where they are placed. I consider the Bower's trap such an improvement over the old *trap* in preventing *gases* from entering our homes, that as a sanitary measure I can recommend its introduction to our homes. It is a well-known fact that a pressure of one ounce per square inch will lift a column of water more than one inch in height. The depth of water which forms the seal in traps is often reduced to a small part of this height, while the pressure upon the pipes from below is often many times greater. Even relieving the pressure does not remove the danger, as the water forming the seal will absorb gases from below, and throw them off into the air above, this process being greatly facilitated by changes in the temperature of the water.

No 1.

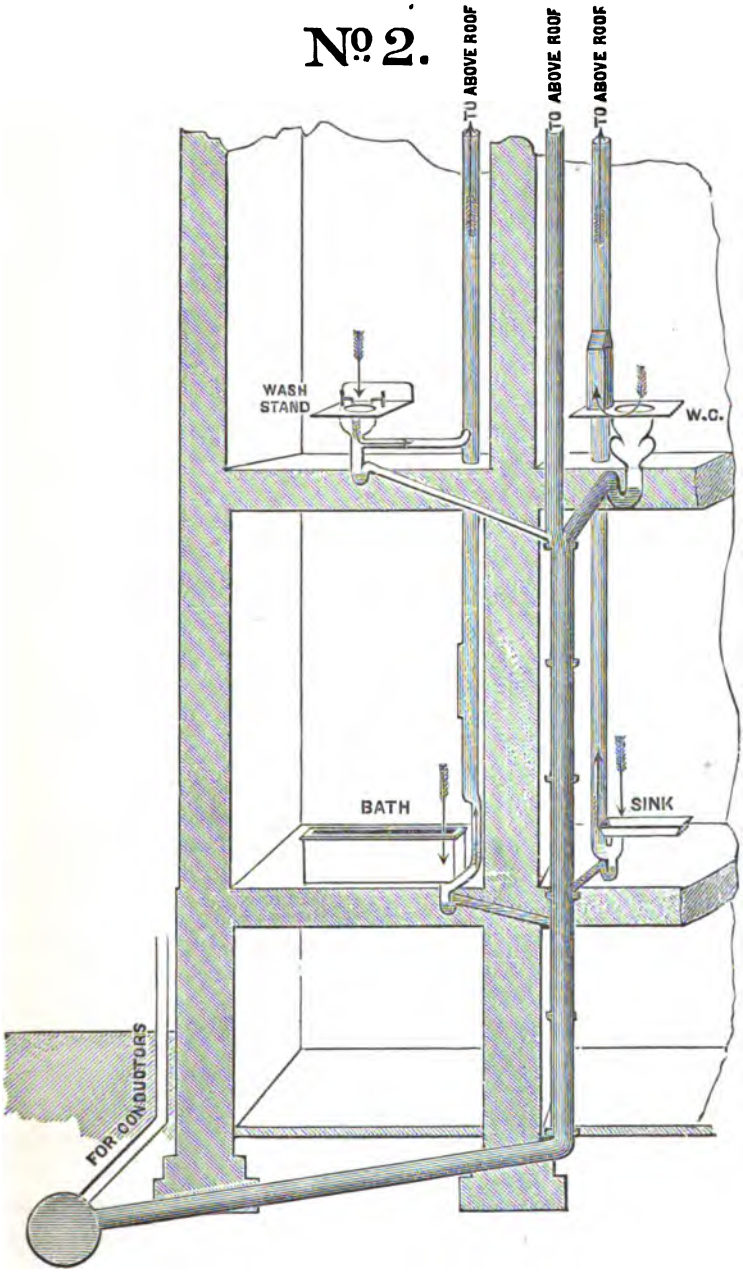


The unventilated waste-pipe exposes the occupants of a dwelling not only to the gas which may be transmitted through the seals from below, but also to that which is generated by the decomposing matter in the waste above the trap and about the fixtures. Whenever the pan of an ordinary water-closet is lowered the gas formed or collected in the receiver is emptied into the atmosphere.

There are many methods by which this necessary ventilation may be accomplished. When this subject first began to receive attention the idea became prevalent that carrying the soil-pipe above the fixtures to an outlet in the roof was sufficient to shut off all entrance of gas into the rooms, and there are now hundreds of dwellings which have no further provision for protection. Probably the owners of such buildings listen complacently to accounts of the tracing of death to such sources, supposing that they have provided themselves and their tenants with immunity from disease from these causes, when in reality they have taken but the first of many necessary steps in the right direction.

One method by which protection can be secured is setting all the fixtures without the attachment of traps, and providing for a continuous downward draught through wastes of every description. This is shown by illustration No. 1. The arrows show the direction of the air. The ventilating-pipe, A, leads to the kitchen chimney, or to a flue heated to bring about the necessary draught. The air flows downward through all the wastes to the pipe A, and through this to the chimney or out through the roof. The trap at B should be proof to pressure from below, otherwise the flow of air from the sewer would stop that from the wastes. The soil-pipes should join the sewer outside the cellar walls, and should be separate from the conductors of rain-water.

In this or any plan it is essential that the flue which induces the suction should be heated at all times, and that it should be of sufficient capacity, the area of its cross-section being equal to or somewhat larger than that of the waste it ventilates. If a large amount of hot water were poured down a waste-pipe whose flue was too small, or was not heated, there would be danger of a temporary rising of air through the heated part of the pipe, un-


No. 2.
TO ABOVE ROOF
TO ABOVE ROOF
TO ABOVE ROOF
WASH STAND
W.C.
BATH
SINK
FOR CONDUCTORS

less a supply of cold water were immediately turned on to prevent it.

This method is very economical if properly constructed in the beginning, an ordinary water-closet hopper, with a provision for flushing, taking the place of the more expensive pan or plunger-closet.

Another method of ventilation and one more easily applied to old systems of wastes is shown by illustration No. 2.

The upright soil-pipe is taken out through the roof so as to prevent pressure from a collection of gas. The water-closets and other fixtures are all trapped, and each is separately ventilated by a tube, which must be taken to a heated flue. In this plan, the conductors for rain water may enter the drains or soil-pipes at any place. Some of the smaller wastes may have merely a gas-proof trap, the ventilating-pipe being omitted.

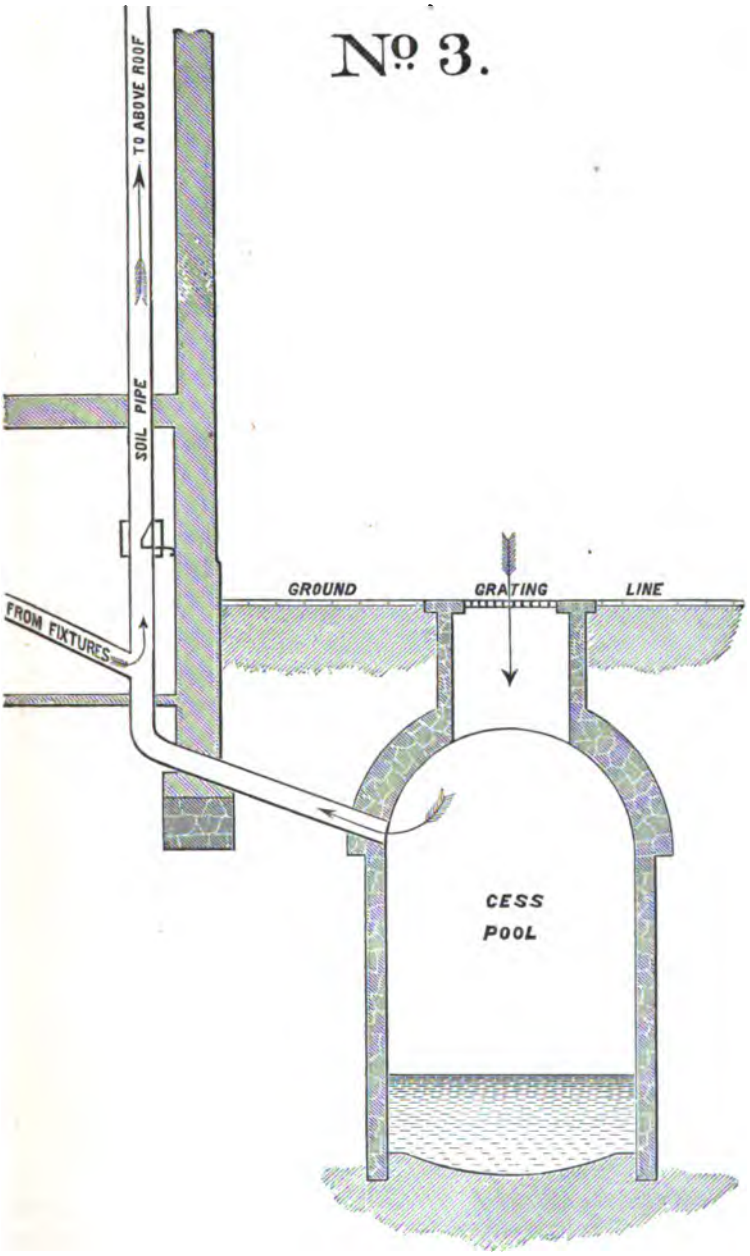
The private sewer should be trapped before it connects with that of the street, so as to prevent the flow of gas into the house pipes. It is not desirable to attempt to ventilate the public sewer.

The ventilating-pipes from water-closets should start from beneath the seats, and the seats should be raised above the earthenware bowls to allow the flow of air over the edge of the bowls to the ventilating-pipe.

Where the closet stands near the upright soil-pipe, which is open at the top, it is sometimes claimed that there is no danger of gas finding its way into the room against the rush of water. But even were this the case, the removal of the odors arising from the use of the closet would be well worth the trouble and cost of introducing the ventilating-pipe.

Care should be taken that the ducts enter a flue which is always heated. In case the kitchen chimney is not warm at all times, the ducts should be heated by other means, for when the air is cooler than that outside, the draught is as sure to be downward, as it is to be upward when the opposite condition prevails.

A gas jet or an oil lamp may be used for heating. A jet which gives out a blue flame—known as an *air burner*—is best, as it makes no soot and gives more heat for the same amount of


No 3.
TO ABOVE ROOF
SOIL PIPE
4
GROUND
GRATING
LINE
FROM FIXTURES
CESS
POOL

gas consumed than one which has a yellow flame. A jet of this kind, which burns one foot of gas per hour, is sufficient to heat a pipe that will ventilate several wastes.

In case the sewerage of a building is connected with a cesspool, the latter should have a grating at the top. The soil-pipe should have no trap, and should be taken out through the roof. There should be provision made for heating the upright soil-pipe in order to establish a current down through the cesspool and up through the soil-pipe to the outer air. (See cut No. 3.)

The first-mentioned plan of ventilation may be used in connection with a cesspool by making the heated flue or duct of sufficient capacity to cause a draught through the cesspool, as well as through all the wastes. In this case there should be no traps.

It has been asserted that discharging sewer gas through the chimneys is not ridding ourselves of it, as it is liable to settle down upon the dwellings and be as dangerous as though coming in by the shorter route, but there is probably little danger from this source. The heat in the flue has a tendency to destroy the gases, or at least to rarefy them so that they do not settle, but are thoroughly diffused.

It is also generally accepted that the more injurious or sewer gas is very volatile, while the heavier carbonic acid gas is not hurtful in small amounts.

Unless the cellar of a dwelling is ventilated at all times, the air will find its way through the floors and partitions to the rooms above. Most cellars have always more or less mould about them, and usually during the winter months the only escape for the air is through the rooms above. To be well ventilated the cellar should have, besides various openings above the ground directly to the open air, a large flue passing from near the cellar floor out through the roof. This need not be heated, as the warmth of the house will insure an upward movement of air.

To ventilate the kitchen there should be a flue of good size—say two feet square—as near the top of the cook-stove or range as convenient, extending upward into the open air. This may be arranged so that it can be closed at the top when the kitchen is not in use. A hopper-like arrangement at the bottom to

gather the vapors from the cooking utensils upon the stove is also useful.

During the colder months, when the temperature of the external atmosphere is from 20° to 80° lower than that required for comfort inside of our dwellings, we must provide for artificial heating and for the ventilation of the various rooms in addition to the provisions already mentioned.

The question of how much heat and air is necessary, not only for comfort but also for health, is difficult to answer in definite terms. The factors of the problem are so numerous and so variable that tables without number would be necessary for the solution of every case. However, we can determine by our senses when we are apparently well supplied with fresh air of an agreeable temperature, and we can then adopt such measures as experience dictates to keep ourselves comfortable. Our feelings are usually very reliable in offering indications of the condition of the air, although a person may remain so long in a vitiated atmosphere, or the change in the air may be so gradual that his senses fail to warn him of his danger, and it is only after a visit to the purer air that the ability to detect such causes of discomfort returns.

Dr. R. Angus Smith, whose original researches have added much to the existing knowledge of this subject, and whose chemical experiments and tests have been particularly valuable, says, "I believe man has learned nearly all he knows of ventilation by attention to these feelings, whilst chemical analysis is attempting to struggle after him, and is constantly finding itself behind in the race."

We are indebted to Dr. R. Angus Smith, E. A. Parkes, M.D., and to F. A. Coburn, architect, for valuable assistance.

X.

CLIMATOLOGY OF AMERICAN HEALTH RESORTS.

By Bushrod W. James, M.D., Philadelphia.

There are fashionable climates and fashionable resorts, as well as fashionable diseases and fashionable remedies, all of which we do not propose to cater to or deal with, as such, in this article.

The health resorts may be classified as follows: First, winter resorts; second, summer resorts; third, resorts for permanent residence.

There is probably no climate that at all seasons of the year is good for any one special disease, so that, as a general rule, change of place must vary with the seasons.

So diversified is our country, and so numerous these resorts, that the important question as to which should be selected, interest and perplex many of the invalid residents, especially in the northern portion during the winter, and of the southern part during the summer season. The former desire to escape the rigors of an ever-changing climate during a large portion of the year, when alternate heat and cold are playing fantastic gambols over the mountains and valleys of the temperate zone and the region contiguous thereto on the north, the principal endeavor being to escape that insidious monster "consumption," and its allies, pneumonia, bronchitis, laryngitis and catarrhal disorders; hence their inclinations lead them towards the equatorial line and the genial isles located in the course of the Gulf Stream, and thus the lower section of country becomes filled in winter with invalids who migrate to the sunny areas of the balmy South.

On the other hand, as the hot season approaches in the South we find the citizens there endeavoring to build up their enfeebled strength, and, farther, to escape the dangers of the low types of fever that are engendered by the excessive heat, by an exodus from home into the cooler climes during the hot season.

Thus we see there is a constant flow and reflow of the population of the different sections of our country, both summer and winter; and this, as a general remark, is the proper system to adopt for the weak constitutioned as well as for those who are in the incipient stage of these destructive diseases. But these are not the patients that require so careful a discrimination on the part of the medical adviser as to the precise health resort to which they shall repair, as the class who are greatly prostrated by or who may be in the clutches of some dire malady, the nature of which may be greatly aggravated, and the patient's life more seriously jeopardized, by a misapplication of the climate which he is to live in from time to time. The importance of classifying the resorts in accordance with their climatic peculiarities, and then again assigning the various classes of cases, and peculiar forms of cases, to the respective resort adapted not only to their diseased condition but also to their temperamental and individual peculiarities of constitution. In this way only can we arrive at a scientific and just use and application in disease of the resorts for health of this continent. Let us consider then what cases are to go away from home, and which are the places for them.

First. To the seashore or to islands in the sea or sea voyages. Second. Those who are benefited by fresh-water resorts, such as islands in the lakes and rivers and along the shores of the same. Third. Moist climates, where the ocean and fresh water are mingling. Fourth. Dry climates. Fifth. Cold climates. Sixth. Warm climates. Seventh. The regions of the pine growth. Eighth. The promiscuous resorts, such as mineral springs, fashionable summer watering-places and mountain hotels, where dissipation and injurious frivolity reign supreme.

Invalids too weak to bear the fatigue of travel, and those in the last stages of consumption, as well as those who have an acute attack of pneumonia, partial or general, in a lung, should not leave home. No invalid should go alone; it is necessary

that there be a congenial relative or friend who will feel deeply interested in the case to accompany the sufferer.

The healthy and sick alike interest themselves in summer resorts, and if the physician be conscientious he will be perplexed, in view of the dissipation and surrounding of fashion, late hours, crowding of many people into one house, improper eating and drinking, overloading of the stomach with greasy food, evening hops, carousals, etc., that now make up the summer entertainments at nearly all of the large hotels, at what are denominated "health resorts."

A trip to Saratoga, Newport, Long Branch, Cape May, Bedford Springs, Niagara, Sharon Springs, etc., or any of the vast number of similar places all over our country and Europe, for recreation, generally ends in a vital depression, so marked as to take weeks or even months to recuperate therefrom, after the deceived sufferer returns home. In fact custom and fashion have turned what were originally intended as resorts for health, into the most systematic generators of disease and dissipation. Therefore they are to be shunned, not only by invalids, but by all who have any regard for the health they have.

The question of winter resorts involves only the sick who are not seeking an opinion for the sake of having the medical attendant sanction a pleasant trip, upon whom they can cast the blame of an erroneous recommendation after their hot weather excesses, but where suffering and life itself or a prolongation of earthly existence is at stake, and where a knowledge of the different climates and various vicissitudes of the localities known as "winter resorts" for invalids must be a requisite; and likewise an acquaintance with the influences which climates exert upon temperaments and disease comes in, and an understanding of the case in hand, to enable the physician to form a correct judgment; for a hasty opinion, or one given in ignorance of these essential points, has killed many a confiding patient who does not know how to decide.

Many cases are sent away that should not leave their own domicils, and many left at home that could have their lives prolonged by a residence out of a rigorous climate.

SEA-AIR.

Comparative freedom from continued storms and chilling blasts is an important condition for a good sea-air resort.

Several influences go towards forming a good climate for sea-shore resorts. The first and most important of these is the evenness of the temperature; then, the maintaining of a medium degree of temperature; then, the more constant flow of ocean-air over the locality; then, the soil should be sandy and not clay, or adjacent to swamps or marshes.

It is well known that marsh lands and clay soils, by reason of their retention of water, give off a large amount of moisture in the warm weather, so much so that fogs abound in such localities; and mingled with this, not unfrequently malarial exhalations exist to make such localities peculiarly prejudicial to health. The cooling and dampness of the atmosphere influences the climatic condition of a health resort if located on the borders of such soil; hence it is important for every class of invalids to avoid such places, unless the dwelling-place at which they are going to stop is sufficiently remote to be entirely beyond the control of such deleterious influences.

It may be urged that the sea-air also contains moisture, and is cooler than the atmosphere inland; this is true, but the saline particles contained in such atmosphere, and the greater abundance of ozone which it contains, far outweighs these disadvantages, and produces even a buoyant and toning effect upon the human system, in several classes of the sick.

First.—Cholera infantum is probably the most noteworthy affection in which speedy help is afforded. The sinking infant from the large city near the seaboard, within a few hours generally begins to improve after removal from the sultry town to where it can inhale the sea-breeze. So marked is this result that charitable institutions are now erecting seashore summer sanitaria for the care of the little sufferers from this dire disease.

Second.—Brain fatigue is astonishingly improved by a short residence in the pure invigorating air of the ocean, either upon its bosom or along its coast. So much is this the fact that even in the winter season I am in the habit of recommending such patients

away from their business, worry or mental toil, directly to the seashore, for at least one or two weeks. The people themselves are beginning to see these advantages, and several of the hotel-cottages at the seaside resorts near Philadelphia have been quite well filled during the past winter, by invalids who prefer these places to taking a southern trip.

Third.—Incipient typhoid fever symptoms are relieved, and doubtless many cases of typhoid fever prevented, by a short residence by the sea.

Fourth.—Nervous prostrations, although much more difficult to relieve, and tedious in their course, are recuperated very considerably by the same.

Fifth.—General debility, unassociated with the prodromic stage of typhoid fever, passes away in many cases by a few days' residence in the saline air.

Sixth.—Lingering cases of chronic rheumatism are frequently restored by two or three weeks by the sea in the summer; the same amount of good does not appear to result during the winter months.

Seventh.—Scrofulous subjects are almost invariably improved, should their health be impaired by living elsewhere, by a long sea voyage, or a residence upon some small island, where the full benefit of the ocean atmosphere can be maintained.

Eighth.—A certain class of asthmas, and a few cases of that periodic variety usually termed by the laity "hay fever," are often wonderfully benefited by a stay at the sea; but it is usually those who suffer from a dry wheezing respiration (asthmatic), while those who have much coryza and catarrhal accompaniments, in my experience of practice, have had their symptoms aggravated. A chronic nasal and pharyngeal catarrh usually improves greatly in warm sea-air.

Ninth.—Neuralgias of a chronic nature.

Tenth.—Cardiac disorders generally improve, and especially those accompanied with nervous palpitation and sympathetic irregular action from other diseases.

Eleventh.—Rachitis.

Twelfth.—Chronic diarrhœa.

Thirteenth.—Dyspepsia; provided the invalid uses a careful

and abstemious diet and takes a large amount of sleep and rest, and abstains from mental exertion.

DISEASES WHICH ARE AGGRAVATED.

Cases that are usually injured may be summed up as follows:

All phthisis pulmonalis cases where ulceration exists, either in the throat, larynx or bronchia.

Carcinoma, where the disease is fully developed and has gone on to the ulcerative stage. The scirrhous stage is very often improved.

Most of the thoracic diseases, independent of those affecting the heart, are prejudicially influenced.

Ophthalmic inflammations are, as a rule, aggravated by residence on islands or at the seashore, where there is a great deal of reflection of the sun's rays, either from the bright sands of the shore or from the surface of the water. A resort along the shores of the lakes, or any stream of water, is objectionable for the same reason.

Consumptive patients should never bathe in the cold water of the ocean, or use the great amount of exertion that is usually necessary in battling with the surf. In latent phthisis surf bathing usually arouses a cough, and oftentimes induces hæmoptysis. A warm salt-water bath, or one tempered from coldness, does not have the same effect, and often proves beneficial. With regard to open-air bathing in river and lake waters, it is prejudicial generally to invalids.

FRESH-WATER RESORTS.

These are principally good for the middle part of the summer season for invalids, and are adapted to such temperaments only as are not easily affected by moist atmosphere from fresh-water surfaces and those in which the catarrhal diseases are not easily produced. It suits males better than females, and those who are able to endure considerable exercise, outdoor air, moisture and changes of temperature.

Second.—Nervous temperaments, worn down by mental toil, grief or physical strain, especially where such individuals have

a taste for scenery differing from that found along the level shores of the coast. It is true that much of the New England coast has bold, rocky and picturesque shores, particularly that of the State of Maine, but this is the exception in the way of our Atlantic sea-coast views; while, on the other hand, lakeside resorts are most all of them beauty spots combining water and elevated land scenery, or with beautiful rolling country adjacent.

Third.—To clerks, business men, secretaries, and those who are engaged in occupations where the influences of septic poisoning are contained for a length of time, the change to such a climate is highly beneficial.

Fourth.—Hypochondriacs are also benefited by the change which the fresh water and scenery produce. Melancholia cases are also helped by the same surroundings, they having a more quieting and soothing influence than the roar of the ocean.

Such a moist climate is counterindicated for all cases of phthisis, for it has been proven that dry climates are most prone to arrest the progress of the disease.

The saline element in the sea breezes is sufficiently invigorating to more than counterbalance the dampness, while in the lake regions, this being absent, we have the full force of the humidity producing its deleterious influence; hence it is better for all phthisical cases, where the temperament and constitutional habits do not interfere, to seek the warm, equable, dry climate at once.

In the United States Signal Service chart, from March, 1871, to February, 1873, a storm-chart has been constructed, giving the number and frequency of the storm-centres passing over the eastern half of our country. For those two years the lowest average has been along the Gulf of Mexico, and extending as far north as the Arkansas line, and then in an irregular line eastward, striking the west side of the Blue Ridge; thence northward to the upper end of the State of New Jersey; then running south a little to the inside of the coast line, all the way to the Gulf, and some distance into it southwest of Florida; then running across the Everglades; then out to sea in the direction of the Gulf Stream. In this area are included the following cities: Brownsville, Galveston, Austin, and Houston, Texas, Fort Smith, Little Rock,

Memphis, Vicksburg, New Orleans, Mobile, Pensacola, Tallahassee, Key West, Montgomery, Atlanta, Chattanooga, Nashville, Bowling Green, Knoxville, Lynchburg, Washington, D. C., Baltimore, Philadelphia, Harrisburg, and Trenton.

The next higher proportion extends from near the central part of the Gulf of Mexico, in a band running northeast, extending from one to two hundred miles wide all the way up the coast, as far as the lower end of Connecticut; then dipping westward to Wisconsin and as far south as the Illinois and Missouri lines. In this area are included the following principal cities: Cedar Keys, Jacksonville, Fernandina, Savannah, Augusta, Ga., Charleston, Columbia, S. C., Wilmington, N. C., Beaufort, Raleigh, Norfolk, Richmond, New York, Williamsport, Pittsburg, Cleveland, Wheeling, Columbus, Ohio, Cincinnati, Toledo, Detroit, Lansing, Chicago, Indianapolis, St. Louis, Jefferson City, Fort Scott, Cairo, Vincennes, Louisville and Frankfort.

The next greater number of storm-centres passed over a region included in a curved line out at sea, about thirty miles east of the New Jersey coast, and from thence striking the northern end of Long Island, including a district of country in which the following places are located: Newport, Hartford, Providence, Boston, Concord, Portland, Troy, Albany, Elmira, Erie; thence west to Milwaukee, Green Bay, Escanaba, Superior, at the western extremity of Lake Superior, Fort Abercrombie in Minnesota, St. Paul, La Crosse, Sioux City, Omaha, Leavenworth, Kansas City, Hannibal, Springfield, Ill., Burlington, Iowa, Davenport and other places near those just named.

The fourth in proportion is in a territory just northwest of Omaha, extending from 41 to 43½ degrees of latitude and 95½ to 101 degrees longitude, including Yankton and Fort Randall, on the Missouri River; then another point of the same proportion occurs in Wisconsin, just northeast of St. Paul, Minn., and a large area of the same proportion extends from some distance west of Lake Superior, extending over the greater portion of that lake, the northern part of Lake Michigan, Lake Huron and the northeastern portion of Lake Erie and the whole of Lake Ontario; extending eastward over the northern part of Vermont, New York, New Hampshire and Maine, out into the Atlantic

Ocean, included in which we find the following places: Eastport and Augusta, Maine, Montpelier, Montreal, Ottawa, Oswego, Rochester, Buffalo, Toronto, Mackinac and Marquette; while the greatest number of storm-centres for the two years named passed over Michigan from Lakes Michigan and Huron, thence eastwardly through the provinces of Ontario and Quebec in Canada, to a region somewhat east of the St. Lawrence, including the city of Quebec. From the last-described area the proportion diminishes again towards the north, until at the forty-ninth degree of latitude it diminished to the lowest point, or that represented in a greater part of the Gulf of Mexico.

These facts, taken in conjunction with the established one that nearly all the extended storms or areas of low barometer that pass over this country come in upon our continent from the Pacific coast, or some point in the extreme Northwest or Central West and proceed in a somewhat easterly direction, and finally bearing off to the northeast, we have some very important factors in making up our estimate of the relative value of the lake regions of country in reference to climatic influence upon health and in disease. As a general rule the greater amount of moisture and sudden change of temperature, the greater will be the number of pulmonary, bronchial, laryngeal, rheumatic, neuralgic and general catarrhal diseases found to prevail. The Signal Service demonstrates the lake regions and their neighborhood to be the localities in which the greatest amount of moisture and the greatest number of changes of temperature occur.

CONSUMPTION.

The ninth census of the United States, taken in 1870, together with Francis A. Walker's map, shows the proportion of deaths from consumption to the deaths from all causes, compiled from the mortality returns throughout the country.

Leaving out those sections of country where the population is too sparse, such as the Everglades of Florida, uninhabited swamps, barren mountain sides, barren plains of the West, and other such regions, we find the proportion for the eastern half of the country to be as follows: Taking ten thousand deaths from all causes, we find the regions in which the proportion of deaths

from consumption is under two hundred and fifty in ten thousand to be located in the lower half of Florida, and an irregular area in the lower half of Georgia, through which the Altamaha River runs; an area in the central portion of Texas, northwest of Austin; another in the extreme western part of North Carolina, just east of the great Smoky Mountains, and a region in the southwest end of Virginia, east of the Cumberland Mountains.

The regions where the deaths from consumption range from two hundred and fifty to five hundred and fifty in ten thousand from all causes, extends through the northern part of Florida and Alabama, nearly as far west as the Alabama River, and as far north as Montgomery, then along east to the coast irregularly as far north as a line running through to Savannah. This is the largest area, and a portion of this extends up northwest, crossing the Yazoo River, including an area on the Mississippi River extending from below Helena to some distance north of Memphis. Another region is found in the southwestern part of Mississippi, extending from Natchez southeast to the Gulf, including a portion of the Pearl River. Another area occurs in the southwest corner of Missouri. A much larger one runs from the southwest of the Hot Springs, including Murfreesborough, thence south to the Gulf, through Louisiana, some distance west of the Mississippi River. This area also dips westward, including a large portion of the central part of that State. There is also a small area of Texas, extending from the Brazos River southwest to near Matagorda Island.

The section where the proportion was from five hundred and fifty to nine hundred in ten thousand, is an area south from Albemarle Sound, west to the Blue Mountains. Another is in the central and eastern part of Kansas. A small area is in the central part of Kentucky. Also one in the northern part of Missouri, and the southeastern part of Missouri and eastern part of Arkansas, running down the Mississippi River below Vicksburg; also the greater portion of the northeastern, middle, and southwestern parts of Texas, with a few small areas in several of the Southern States, the localities of which cannot be well defined.

Where the average was between nine hundred and fourteen hundred in ten thousand, we find in the South areas near the fol-

lowing cities: Pensacola, Mobile, New Orleans, Baton Rouge, Sabine City, and Galveston, Texas, running some distance up the Sabine River. Another, including the greater part of Missouri, running southwest, even beyond the Arkansas line; in Western Tennessee, Northern Alabama, western part of South Carolina, greater portion of North Carolina, a portion of Virginia, eastern end of Kentucky, and southwestern end of West Virginia, and two other areas in the western end of Kentucky; another running through the southwestern part of Indiana, the central part of Illinois, running up the west coast of Lake Michigan to its junction with Green Bay, including Chicago, Bloomington and Springfield. Another portion extends through the middle part of the State of Indiana. Another small area is in the southwest corner of the State of New York, near Lake Erie, thence extending southward through Pennsylvania, including all the northern and eastern part of the State, and likewise taking in a part of the oil regions, extending south of the Alleghany Mountains for several miles, and the eastern portion of Minnesota, including St. Paul.

The regions where from fourteen hundred to two thousand deaths occurred from consumption in ten thousand are in Eastern Virginia, a section around Lynchburg, and then farther north, extending as far as the middle of New York, running eastwardly to the coast, including New Jersey, Connecticut, a portion of New York State, a greater part of Ohio, the lower part of Michigan, the southeastern portion of Illinois, the southwest, middle and eastern portions of Tennessee, sections in the eastern and western parts of Kentucky, the lower part of Pennsylvania, including Harrisburg, Pittsburg, Philadelphia and Lock Haven, the western part of Massachusetts and the lower part of Vermont, a greater portion of Iowa, and much of the eastern portion of Wisconsin, the middle portion of Indiana, including Indianapolis, the lower portion of Ohio, including Cincinnati, and a small area in the southwest corner of Missouri.

The greatest number of deaths, not less than twenty per cent., occurred in Maine, New Hampshire, and the northern part of Vermont, the northwestern part of New York, along the St. Lawrence and Lake Erie, or that region of country where the storms

pass off towards the coast, and where a great amount of fog is found during all the warmer part of the year, indicating that moisture and the sudden changes from warm to cold or cold to warm are especially active agents in the production of pulmonary diseases.

MOIST CLIMATES (WHERE THE OCEAN AND FRESH WATER ARE MINGLED).

I have noticed that some cases of heart disease, where there is a disposition to bronchial catarrhs and pulmonary congestions, are improved by a residence along the borders of salt-water inlets, bays and streams, where the fresh water is mingling with the salt; such for instance as Jacksonville, Florida, Mobile and places along the shores of the harbors of New York and Portsmouth.

Those who are easily affected by warm dry atmospheres, and with whom the salt-air of the sea does not agree, find more comfort from a residence in such localities than elsewhere, in the proper season of the year.

DRY CLIMATES.

These, if resorted to in seasons when there is not an excessive amount of heat generated, as in midsummer, exercise a beneficial climatic influence upon a large majority of the catarrhal forms of disease, and the rheumatic and gouty diatheses.

Intestinal disorders as a rule do better in dry than in moist climates, and so do the low types of fevers; excessive heat with dryness, however, has a tendency to superinduce intestinal disorders.

Phthisis improves in dry, equable climates, providing surrounding circumstances agree with the individual; such special localities should be selected as to enable the invalid to be out in the open air without danger during the greater part of his sojourn.

Three places widely apart have had observations made upon them, as follows: During December, January and February, at Anaheim, Southern California, an invalid could have been out of doors all day during eighty-one days, and would have been con-

fined indoors by bad weather nine days; at Mentone in the lower part of France, there were sixty-seven fair days and twenty-three bad days; and at Aiken, in the western part of South Carolina, fifty-three fair and thirty-seven bad days. The average temperature at Anaheim, during the three winter months, was 61°; at Mentone, 48⅓°; and at Aiken, 53°.

COLD CLIMATES.

These are suited to the weak and feeble constitutions, where anæmia is present, and to the following:

Marasmus does better in resorts that have such a climate.

Hæmorrhagic cases, where there is a tendency to hæmoptysis, hæmatemesis, epistaxis, menorrhagia, hæmorrhoidal discharges, and to that condition where the capillary vessels are subject to disease or rupture.

Puerperal, hæmorrhagial and petechial diseases.

Erysipelatous and erythematous diseases.

Invalids who are easily affected by the heat of summer, and those subject to typhoid fever and nervous prostration or headache.

Bilious temperaments that are subject to congestions of the liver, and individuals who are subject to severe congestions of any of the organs, suffer less, and they live longer than they would in a hot climate.

The very movements, in the slow, deliberate and enervated inhabitants of the South, compared with the rapid step, quick, excited manners and business energies of residents of the extreme northern part of our country, will serve to illustrate and bear out the foregoing remarks.

The diseases aggravated in these climates are such as are improved in warmer climates.

Surgical wounds do better in mild climates than in either the very cold or very hot.

WARM CLIMATES.

Tuberculosis, scrofulosis, carcinomatous affections, bronchial and laryngeal inflammations are generally improved, provided there is not much moisture associated with the warmth. In such

an event these climates are injurious, for while in the moist, warm air, the patient apparently gains for a time, in the long run he will be much more improved in a mountain locality where it is dry and clear, even if not so warm. Instances of this latter climate may be found in the mountains of North Carolina and some of the higher mountain plateau regions of Southern California or in Central Texas, or possibly some of the well-protected valley regions of the Rocky Mountains. The central part of Iowa, although not strictly a warm climate, yet is much milder than adjacent regions, and consequently a good point to remember in looking up health resorts for restoring cases of phthisis as above mentioned.

The fact that the British army sanitary reports show that along the equator, septicæmia and pyæmia do not occur, and that they increase in frequency as we leave the tropics, is a strong argument in favor of a residence in the tropics in cases where surgical operations have to be performed, and for the treatment of wounds and indolent ulcerations; and the best localities are found where there is dryness of the air and freedom from sudden changes of temperature. Southern California, Middle Alabama, Central Texas, all afford an example of warm, comparatively dry regions.

In other countries, such as portions of Guiana, Brazil, Australia and some of its adjacent islands, Bengal, Algiers, Tunis, Egypt, some parts of Africa and Asia, this condition holds good.

In speaking of *warm* climates, we must not be understood as intending that consumptives or other invalids should remain in a climate when it becomes a *hot* one, for they would be made worse, simply by the enervation produced by the heat. In treating patients climatically, we mean that they shall migrate, as the warm seasons do themselves, further to the north in summer, further to the south in winter, avoiding thereby extreme heat in the summer and extreme cold in winter, as either is injurious in most diseased conditions.

REGIONS OF THE PINE GROWTH.

The pine wood regions of our country extend from the extreme North to the extreme South, near the Atlantic and Pacific

coast, and along some of the mountain regions of the interior. Those cases of inflammatory and ulcerative throat diseases, chronic bronchial and pulmonary inflammations, where there is a constant irritability and excitability of the mucous membrane, find great relief by residing in an atmosphere loaded with the odors of the pine growth.

When there is an almost constant tickling sensation and an annoying cough therefrom, many find relief by a residence during the winter months in North or South Carolina. The mountain valleys of the Sierra Nevadas, in the spring and fall in the pine regions of New Jersey and Central Pennsylvania, especially along the Blue Ridge range of mountains, and during the hot months of the summer the evergreen hills of Maine, New Hampshire and Vermont, and some of the islands along the northern coast, such as Mount Desert and Grand Manan, afford resorts suitable for such conditions.

CLIMATES ON MOUNTAINS AND MOUNTAIN PLATEAUS.

These regions may be classed among the cold or cool climates. Here we have another element coming in to play its part upon diseased conditions, and that is *diminished atmospheric pressure* and a diminished loss of oxygen, which, at an elevation of four thousand feet, would amount to a loss of oxygen absorption per day of 541.44 grams, which would amount in four months to 25.920 liters of oxygen, making a very important difference in the functions of respiration and circulation, and there would naturally be a disposition to blood stagnation in the lungs and heart, and a diminished action of the heart would naturally affect the normal flow of blood through the brain, liver, kidneys, etc.; the nervous system would become more or less involved through the greater anæmic condition of the brain, and patients already troubled with headaches, vertigo, and a congested state of the cerebral vessels, would be greatly aggravated by a residence in such localities; hence all persons subject to an apoplectic tendency, to hæmorrhages, pulmonary, hepatic or other congestions, should never seek a residence for health in very high localities.

M. Armieux, in 1867, made some important observations on some invalid soldiers who were sent from a hospital in a low

level at Toulouse to another hospital stationed at Barégas, four thousand feet above the sea-level. He found in eighty-six cases examined before they left the low, and then again after a four months' stay in the high locality, an average expansion of the chest of about one inch. He considers that this increased capacity was induced by the function of respiration being increased in order to form an equilibrium for the oxygen rarefaction. Parot formerly claimed that the pulse at sea-level averaged 70; at three thousand feet, 75; at forty-five hundred feet, 82; and at six thousand feet, 90; but Armieux proved that the pulse diminished rather than increased, and the respiration was accelerated. He makes up his mean result from a large number of observations, that the average increase of respiration is two per minute, and the average decline of pulse-rate four per minute. These results were also obtained in Mexico by Dr. Cavaroz, who made similar observations while a military surgeon there, which upsets the old theory as advanced by Parot. Hence, in sending invalids to Colorado and mountain elevations of the Alleghanies, Rocky Mountains or Sierra Nevadas, great care must be exercised in the selection of invalids sent thither, especially in heart and pulmonary cases with sluggish circulations.

At present it is a well-established fact that native residents of high plateaus, where the temperature does not vary greatly from day to day, whether it be steadily cold or steadily warm, are the most free from that fatal scourge, "consumption." Such localities, however, if at all accessible to the sick, soon become crowded with distant consumptives, seeking to restore their health.

Their presence alone, and the death of many such in these healthful localities, give them a bad reputation, because many of the incurables die there; and then again their presence in the larger towns and cities has a tendency to vitiate the health of those residents of the place, and cause a tendency to the production of phthisis, especially in those who have to nurse and care for these sufferers.

Such a plateau as that of the Colorado region, near Denver and Colorado Springs, and some of the high valleys among the coast mountains of California, would be extremely healthy places, did

not the sick flock there and produce a counterbalancing effect. A permanent residence in such places, in some, prolongs existence for years.

In the Bolivian Andes, remote from easy access, is a region of country of the most salubrious character; tubercular phthisis is unknown. According to Dr. Scrivener, in 1869, after a residence of nearly ten years, "he never saw or heard of the origin of a case of pulmonary complaint among the mountains of Cordora and the Andes of Bolivia."

Davos-am-Platz, a resort in the Tyrol Mountains, has a great German reputation, but the winters are sometimes wretched, rendering the climate attended with risk for consumptives. The Algerian climate has been very much extolled in times past, but like our Colorado climate, is useful only in the first stage of the disease, for when disorganization of the pulmonary tissue once sets in, the climate there hastens the patient to his grave.

In Costa Rica the mortality report for 1867 was sixteen only from phthisis out of 2689 deaths from all causes, while the percentage of deaths in Switzerland is 18 per cent., and along our own seaboard 20 per cent.

The valley east of the Rocky Mountains, from the region of the Arkansas River valley down to Santa Fe, in new Mexico, would constitute the northern and southern limits for consumptives in that part of our country. In the Pacific climates invalids must go farther south than San Francisco, for in that city many Chinamen are affected with consumption, emphysema and pulmonary diseases generally.

Dry climates and moderately warm ones are most successful in inflammatory consumption; cold climates are best in chronic phthisis, provided the heart maintains a good circulation and keeps up well the temperature of the body. For those who have weak circulations, warm and dry climates, and preferably those that are somewhat elevated are best, especially for females.

MALARIAL DISEASES (COMPARED WITH PHTHISIS).

In the United States where consumption least abounds, malarial diseases are the most destructive. This is not due so much to the nature of the population, as it is to the climatic and soil in-

fluences of the regions of country thus reversed in these two classes of disease.

The reason why blacks die off in such large numbers from intermittent, remittent, bilious and other low types of fever, is because a greater portion of this population live upon the low lands of the southern part of our country, where these fevers are most abundant and fatal; while the foreign element and the native whites, who foot up the largest mortality lists in pulmonary diseases, do not migrate largely to the swampy regions, where these fevers prevail in their greatest severity; for instance, we find Maine, New Hampshire, Vermont, Rhode Island, Pennsylvania, western part of Virginia, and the States of West Virginia, Minnesota, Wisconsin, the northwestern portion of Illinois, the middle of Iowa, the central part of Kentucky, and the eastern mountain regions of Tennessee, and the western part of Georgia, together with a small area in the lower part of Mississippi, and several small areas in the State of Texas, almost free from these malarial diseases; while they prevail in their greatest violence in localities like Delaware, Maryland, and especially the shore line of the Chesapeake Bay and its inlets, the eastern portion of North and South Carolina, in the lower Mississippi valley, the western part of Louisiana, the middle portion of Texas, the middle portion of Kansas, the southwest portion of Tennessee, portions of Alabama; while the highest portion of all is found in the upper and middle part of Florida.

INTESTINAL DISEASES.

Intestinal diseases show a very peculiar mapping; the regions least affected being a tract in the southwest and middle portion of Texas, in which Austin is located; and the Gulf coast, where Galveston and Sabine City are situated, and a tract in Eastern Tennessee, west of the Cumberland Mountains; also another tract in the western part of North Carolina, in the Blue and Smoky Mountain regions. The localities of deaths from intestinal diseases averaging from one hundred to two hundred and fifty in ten thousand from all causes, are found in Western Florida, Middle Georgia, Alabama, Mississippi, Middle Missouri and Middle Tennessee. Intermingled all among these are patches of

country where these intestinal diseases range as high as nine to fourteen hundred in ten thousand, in which we find the cities of Savannah, Cleveland and Kansas City; while the regions in which the greatest number of deaths are found to occur are in the lower part of Mississippi, western part of Iowa, a tract in the lake regions east of Lake Michigan, and an area around Albemarle Sound in North Carolina. The proportion from five hundred and fifty to nine hundred includes the cities of Providence, Hartford, Albany, Buffalo, New Haven, New York, Brooklyn, Philadelphia, Baltimore, Pittsburg, New Orleans, Galveston, St. Louis, Chicago, Cincinnati, Detroit, Madison, St. Paul and many other places.

These mappings show us the importance of sending the patient with malarial disease away from southern climes during the hot season of the year, and the pulmonary and consumption cases away from the North during the cold months of rigid winters; while for intestinal diseases special regions of country may be picked out in almost any section for their abiding-place; so that the adaptability of these classes of cases to the proper healing climatic influence necessitates a migratory residence for invalids; hence, quiet health resorts must be selected for each individual case, for summer, winter, spring and fall, without any special reference to any special attraction at the health resort itself.

With regard to mineral springs, no homœopathic patient should risk his health and probably life by drinking mineral waters as found at some of the health resorts, nor should they select for themselves any mineral water region where they will be necessitated to drink the waters from such springs at the table; nor should they bathe in any mineral or medicated waters, excepting salt water. Again, no invalid should go to any promiscuous resort without having medical advice from a physician who is familiar with all the health resorts, and who is competent to decide which is the best.

XI.

CLIMATOLOGY OF THE STATE OF NEW YORK.

By A. R. Wright, M.D., Buffalo, N. Y.

Climate has been properly defined as "the sum total of all influences derived from the atmosphere and the soil." Taking this definition as the basis for our work, we are obliged from lack of reliable data and statistics to give a very incomplete report on the climatology of the State of New York. There are no mortality reports published except for a few of the largest cities; and what we have obtained on morbility has been through a long and tedious correspondence.

The principal object has been to give a correct knowledge of the unhealthy localities and the prevailing diseases of those localities. Our *first* notes are on the topography, and the *second* on the medical geography of the State. I think it may be said, generally, that the localities that are fertile and well drained and cultivated have but little disease arising from the condition of the soil.

Taking the first natural division of the climatology of the State, its hills and mountains, we find three mountain ranges. The first or most easterly is a continuation of the Blue Ridge from New Jersey, and enters the State through Orange and Rockland counties. They appear mostly on the eastern side of the Hudson, and give to that river its peculiar charm, "the Highlands." The highest points in this short range are from 1000 to 1700 feet above the level of the sea.

The second series runs northeast through Sullivan, Ulster and Greene counties, terminating in the Catskills. Shanangunk Mount is an eastern range of the series. This series of mountains has some steep and rocky declivities, most of the surface being unfit for cultivation. The highest points are from 3000 to 3800 feet.

The third series of hills enters from Pennsylvania, and runs northeast through Broome, Delaware, Otsego, Schoharie, Montgomery and Herkimer counties to the Mohawk Valley, which seems to terminate them, but the same series appears on the north side of this valley, and further on shows itself in the grand rocky heights of the Adirondack region, where it terminates. The culminating point in this range is Mt. Marcy, 4000 feet in height. The mountains of the Adirondack are wild, rugged and rocky, the rocks being of igneous origin.

West of this series of mountains are the lakes of Central New York, to the number of about twenty, the longest being forty miles, and the shortest one mile in length. The surface around them is mostly rolling and high land.

West of a line through Crooked Lake, a series of hills, which is the northern termination of the Alleghany Mountains, occupies the entire south half of the western part of the State. Along the irregular northern boundary of these is the water-shed that separates the north and south drainage. From this line northward to Lake Ontario, there is a gradual decline, mostly by three distinct terraces. The first of these has a varying width of six to ten miles, and gradually rises from Lake Ontario to the "Ridge," a narrow sandy elevation 200 feet above Lake Ontario, and which is supposed at some remote period to have been its shore.

At Rochester the Genesee River falls over the first terrace. A few miles farther south of the "Ridge" is a limestone terrace, which rises to 340 feet above the level of the lake. Of this district north of said Alleghany water-shed, and between Lake Erie and the west line of Oneida County, the surface is generally level or undulating. North of the first ridge to Lake Ontario it is quite level; south of this ridge it is undulating and hilly, becoming more hilly near the water-shed. The eastern part of this district is quite level or undulating as far south as the middle of Onondaga County. The soil of this district is generally sandy and gravelly, loam and clay, with some alluvial deposits and decomposed shale and limestone. On the conditions of the atmosphere, I think it may be said that the range of temperature in this district is less than in other parts of the State, except the central lake region which adjoins it; also that fogs do not prevail as greatly here as

in the hilly parts of the State. The surface being so level, the streams are generally sluggish.

The district south of said water-shed and eastward from Lake Erie, usually called the "Southern Tier" of counties, is generally quite hilly, with narrow and crooked valleys; and as a consequence has rapid streams and good drainage. The soil is generally clay on the hills, many places with hard pan underneath, sand or sandy loam, occasionally alluvium in the narrow valleys. Fogs prevail in this district to a great extent, especially in the months of July, August and September, rising from 3 to 5 in the morning, and lasting till 9 and often 10 o'clock, rarely later. Hence on very many mornings of the months named, the air in these deep valleys is saturated with moisture to a late hour, and catarrhal affections are a natural consequence.

In the lake district occupying the centre of the State, the soil is generally sandy, gravelly or clayey loam, with considerable disintegrated limestone. This last is supposed to cause the prevalence of goitre. The cultivated lands are generally very fertile.

The whole southeast part of the State, lying east of the Chenango River and south of the Mohawk, is generally hilly, some of it mountainous. That part of it through which the third series of hills run, is quite mountainous and hilly, with deep valleys, especially in the southern part, having clay soil on the hills generally, often hard pan underneath, and some alluvium in the valleys. Towards the Mohawk valley the surface is not as hilly, and the valleys are wider, the soil generally much more fertile and arable. The surface for the first and second series of mountains is greatly broken, as in Greene and part of Orange County, those parts including the Catskill and Shawangunk mountains. Other parts of this region are hilly and hilly upland, with some fertile valleys. The soil is as varied as the surface, from the light sandy of the mountains to the clay and gravelly loam of the hills and alluvium of the valleys. In Westchester County much of the soil of the hills is a disintegration of primary rock. While the general course of all the streams of the eastern and northern part of the State is *south* to the Hudson, Delaware and Susquehanna rivers and *north* to the St. Lawrence, the Mohawk River makes a singularly lawless cut almost directly eastward

through the range of hills that run nearly north and south. These hills seem to slope down either way, and assist in making the valley of the Mohawk a rich alluvium. In some parts of this valley intermittent fever prevails, and other diseases are modified by the miasm.

The northern district of the State, which includes the wilds of the "John Brown tract" and the Adirondacks, are the least known in topography and medical geography of any portion of the State. Indeed, on a large part of it there is not sufficient population to give statistics of disease. The surface generally is very hilly or mountainous, the declivities and summits of mountains covered with ragged ledges of rock, except a strip of land a few miles in width along the northern boundary, which is quite level, in some places swampy and the streams sluggish. Imbedded among the mountains is a large cluster of beautiful lakes, generally long and narrow and bordered by steep banks. Their clear, cold water is a great attraction to tourists in the summer time. The soil on the hills and mountains is generally light and sandy, being a disintegration of the primary rock; on the low land clay mostly and some alluvium. The temperature of this extensive wild and hilly district has a large range of —45° to +104° F., often changing 40° to 50° in a few hours.

We have now given a superficial sketch of the surface conditions of the State. A full topography and medical geography would require much more space, time and material than we can here command. We will next proceed to a study of the more direct relations between the surface conditions of soil and the prevailing diseases of certain unhealthy localities. Whatever theory we may adopt on the origin and propagation of zymotic and miasmatic diseases so-called, we are naturally led to two distinct sources for the disease-germ, one in marsh miasm, the other in the waste matter from the abodes of men and animals; the one a *natural* product of the earth and giving the germ of miasmatic diseases, such as intermittent, remittent, autumnal, jungle, Panama and all the kindred train of fevers; the other an *artificial* product, giving the germ for many if not all the real zymotic diseases.

Thus it will be seen that these two products give different

types of disease for the pathologist's study. The artificial product, though of great importance from its changing source and variability of appearance, would naturally be omitted in a strict report on exclusive climatology. But as a matter of general interest, I wish to make the following extracts from scientific reports of some of the well waters of Rochester and Buffalo; as far as I know the only cities in the State from which such reports can be obtained. The examinations of the water in each case were made with the aid of chemistry and the microscope. Professor Latimore, of the University of Rochester, made his report officially for the city of Rochester to the city board of health. I can only make room for the following digest and extracts from his valuable paper. A Parliamentary Commission on the Domestic Water Supply of Great Britain declare that water containing more than five grains of common salt to the gallon is not safe for drinking or culinary purposes, the salt showing undoubted contamination from the sewers. Professor Latimore, in the waters of the 40 wells he tested, found the amount of salt in some as high as 51 grains to the gallon, the average being 16.78. He also says of some sewer-water tested: "The average proportion of salt found in these 9 sewers is 3½ times less than the average of the 40 wells. . . . . Most of the wells are shallow, not reaching the rock, and are filled by the infiltration of water percolating the surrounding soil. If the well is excavated in the rock, it simply taps the network of crevices and seams by which the surface water sinks to lower levels. Therefore the deeper the well, the greater the danger of pollution. . . . . Here are 50 cases of typhoid fever, or closely related diseases, reported by the attendant physicians to the board of health. *All of these patients except two used well-water.* In all these 40 wells examined, with but one exception the quantity of salt exceeded 5 grains per gallon. I may add that the results of the investigation are perfectly accordant with my experience for a number of years in the analysis of many well waters for physicians who have suspected them as the cause of typhoid fever and other diseases." Professor Kallicott, of the New York State Normal School at Buffalo, in an equally reliable report on the well-waters of Buffalo, says: "9, 16 or 20 grains of Chlorine

in the gallon, betrays its vile origin. Sewer-water often contains less." In conclusion, he says: "The wells of our city are no better as a genus than those of other cities; they are undeniably bad, and their use should be discouraged. I have examined wells of all ages and conditions, and a comparison of results convinces me that it is useless to try to keep pollution out of a city well by depth, by cement, by hard tile or by any other device." Dr. Jay Ball, of Cortland, reports to me on the wells of the village: "Inundations are always followed by typhoid and dysentery, which I attribute to the poisoning of our wells by the washing of the contents of privy vaults and drains through a stratum of gravel into them." These reports need no comment.

On the natural source of disease-germs we note the following as the principal miasmatic localities of the State. But we have not attempted to enumerate the countless unhealthy spots of *saturated* soil which *may* exist on hillsides or mountain tops, as on the Catskills, wherever an underlying basin of impervious rock holds a clay soil. This list contains only an account of marsh lands or miasmatic localities; and we begin in the southeast corner of the State with the "salt meadows" of Long Island, the great source of the intermittent which prevails so generally on large portions of the island. The coast, both north and south, has these extensive "salt meadows," which are low marshy lands, overflowed by a mixture of salt and fresh water. The coast is greatly indented with bays and creeks, up which the tide sets for long distances. In some of the bays are islands of the same character as the "salt meadows." On some parts of the north coast are *necks*, higher land and more fertile. The disease-germ seems to be developed by the decay of vegetable matter. Dr. Belden, of Jamaica, L. I., on this subject, says: "There is no other way of accounting for intermittents, which we find in certain places, except on the supposition that salt marshes produce the seeds of the disease. The intermittent does not generally make its appearance in the immediate vicinity of the meadow, but often miles away, on some elevated spot, perhaps in the very place one would select as being the most salubrious and healthy. . . . . I am confident that the intermittents on this plain are produced from the 'salt meadows.'" Dr. Baylis,

of Astoria, L. I., says: "The salt quality of the water certainly does not prevent vegetable decay, and inundation of the meadows effects the deposit of numerous pools of stagnant water. . . In proximity to malaria mere elevation affords little or no protection, but I have observed, when conjoined with elevation, the thoroughly defensive agency of investing trees and houses."

On the south and southwest sides of Staten Island salt marshes cause considerable miasmatic diseases.

In the upper portion of New York city, near "Harlem River on the east side," there are places of several acres in extent, the surface of which is but a few feet above the level of the water at high tide. These low grounds are penetrated by lagoons, whose waters, obstructed by the construction of streets, make a source of miasm in this portion of the city.

At Mount Kisco, in Westchester County, the drainage is poor, and there is considerable intermittent fever from the effects of stagnant water in ponds. At the southern end of Lake Champlain is a marsh, and Wood Creek, a deep sluggish stream, flows into this part of the lake. Intermittent prevails in this region to a moderate extent. In the northwestern portion of St. Lawrence County near Depeyster, there are several marshes, ash and cedar swamps, and lakes with marshy borders, causing miasmatic diseases in the neighborhood. On the border of Oneida Lake is Cicero Swamp, an extensive tract of marsh. In the north part of Onondaga County, near Oneida Lake, there are numerous tracts of low swampy land, some of them covered many feet in depth with peat and muck. Going a little farther westward into Wayne County, north of the "Ridge," there are many sluggish streams, with tracts of marshy land on their borders; also two *large* marshes in the town of Savannah, Wayne County. Intermittent fever prevails near these marshes. Clyde River, in and near this county, and a little south of this, the outlets of Cayuga, Seneca and Owasco lakes flow sluggishly through marsh lands. Along the whole course of the Seneca River are extensive swamp lands known as the Montezuma Marshes. The physicians near here report that intermittent fever and bilious affections prevail. In the valley at the head of Cayuga Lake, near Ithaca, are large swamp lands. Recent drainage within the limits of the village

has relieved it greatly from the effects of miasm, but there is yet often an overflow by backwater from Cayuga Lake. Some have advocated the deepening of Cayuga outlet, hoping thereby to drain thousands of acres of swamp land in the valley. At the head of Seneca Lake, "between the villages of Havana and Watkins, is a swamp one and a half by three miles in extent, covered, except in very dry weather, with backwater from Seneca Lake. The State dam at Seneca Falls increases this backwater. When there is an extended overflow of this swamp, followed by a correspondingly dry season, miasmatic fevers prevail, but more in proportion on the hillsides than in the valleys." In the level portions of Genesee and Orleans counties the streams are so sluggish that in some places there is overflow of water and stagnant pools, causing the usual miasmatic fevers. Tonawanda Swamp in this region is partially drained by Oak Orchard Creek, a sluggish stream, which overflows the low lands on its border. To make this creek a feeder to the Erie Canal, the State authorities lowered its bed. This condition causes an overflow earlier in the season, and thus increases the amount of miasmatic fevers in the neighborhood. On the effect of climate on the diseases of the western portion of the "Southern Tier" of counties, Dr. C. Ormes, of Jamestown, gives as the result of observation and constant medical practice for forty years in this region, "that the temperature in the valleys is often 5° to 8° lower than on the hills; hence epidemic diseases, especially rheumatic and scarlet fever, are more malignant in the valleys than on the hills, and pneumonia more prevalent." He also says: "Overflow of streams in the spring produces no sensible effect on disease, but overflows in June or July are frequently followed by epidemics of dysentery or a malarial type of fever." Doubtless these remarks will apply equally well to all the "Southern Tier" of counties as far east as the Delaware River.

We have no statistics from which to make comparative tables of prevailing diseases of different localities of the State. The only means to approximate this is the mortality table of the last census report, taken in 1875, and this is very imperfect by omission. But on the supposition, which we think is a fair one, that the omissions are about the same in different parts of the

State, the comparison will not be impaired. From said table we make up the following exhibit of the relative mortality from the diseases named, on a given equal population for each district named, for the year ending June, 1875. *Northern Tier* includes Niagara, Orleans, Genesee, Ontario, Monroe, Wayne, Cayuga, Onondaga and Oswego, and belongs geologically to the Niagara and Salina period. The *Southern Tier* includes Chautauqua, Cattaraugus, Alleghany, Steuben, Chemung, Tioga and Broome, and belongs to the Chemung period. The *Northern*, Clinton, Franklin, Essex, Hamilton, Warren, and St. Lawrence, mostly Archæan on Primary rock. The *Southeastern* includes Columbia, Dutchess, Orange, Putnam, Ulster and Sullivan. The *Long Island* district includes Suffolk and Queens counties.

	Scarlatina.	Diphtheria.	Diseases of Air-passages.*	Consumption.
Northern Tier, . .	115	17	130	176
Southern Tier, . .	165	27	160	159
Northern or Adirondack,	38	20	107	192
Southeastern, . . .	71	46	122	184
Long Island, . . .	62	126	171	181

* Includes croup and laryngitis.

XII.

VILLAGE DRAINAGE.

By L. D. Morse, M.D., Memphis, Tenn.

The object of drainage, in a sanitary point of view, is the promotion of health. This is the end proposed, whether the work is confined to an isolated dwelling, a small collection of houses and dwellings, denominated a village, or a larger aggregation of the same, dignified by the name of city.

The problem presented often becomes an intricate one, especially in large towns, where the relative position of the land is low. The history of drainage in London and New Orleans, for instance, is very interesting and instructive, on account of the obstacles encountered in the work of securing an effective system of sewerage.

The larger a community becomes the greater are the difficulties which beset the sanitary authorities in that community. The question is one of minor importance considered with reference to the farm-house or the domicile of a rural hamlet, and yet it merits far greater attention than it usually receives.

Our remarks on this occasion will be directed to a brief consideration of the sanitary problem, as it presents itself to the inhabitants of villages.

Filth and garbage are to be disposed of, in the first place, and superabundance of moisture in the soil to be remedied in the second place.

There are furnaces which consume their own smoke. It is just as easy to utilize, on the spot, the filth and garbage of the village residence.

Let every householder have in the rear of his lot a shallow garbage pit, where all refuse which will decay should be thrown. It may be made the receptacle for bones, kitchen slops, wood-ashes, weeds, brush, etc., etc. Near by, under cover, should stand a box or barrel of lime, which ought to be freely and frequently used for the purpose of destroying the noxious exhalations which would otherwise emanate from the mass in warm weather. The old-fashioned privy should be replaced by the earth-closet; but if this is not practicable in particular cases the vault should give place to boxes which can be readily emptied. Lime and dry earth should be frequently used to disinfect the contents of the boxes, which may be added periodically to the garbage pile, and once more thoroughly disinfected with lime and dry earth. This composite heap will furnish rich manure in spring for the flower and vegetable garden, and to fertilize the fruit and shade trees, to the roots of which it may be plentifully applied.

With drippings from the stable and pig-sty, where such institutions form part of the establishment, the same course should be pursued.

The method sketched above will be found to cost but little time and labor, while it will prove of vast utility.

In small towns sewers are not practicable nor desirable. A system of surface drainage should be faithfully worked out on all the streets, so that after a rain the water may be speedily carried off, instead of remaining in stagnant pools to poison the air with their noxious effluvia. When there is sufficient fall, tile may be used to drain the yards or lawns. The tile should be laid below the frost-line, and their termini carefully protected to keep out mice and rats, which otherwise by their digging might obstruct the drain.

Nearly every village residence has its flower-beds and garden-patch. These institutions may be rendered far more effective than they are ordinarily by the laying of a few lines of drain-tile across the lot, if an outlet can in any way be obtained. Besides, the prompt removal of superfluous water will produce a condition more favorable to health.

Contrast the practices we have recommended with those which too often prevail in village communities; garbage scattered about

indiscriminately to rot and vitiate the atmosphere; the privy, stable and pig-sty, active manufactories of pestilent exhalations; surface water allowed to accumulate until the house itself is saturated with health-destroying damps.

The residents of the average American village sadly need enlightening on sanitary subjects. In many instances they are innocent of the first principles. Where lies the fault? Indisputably with the supposed conservators of public health, the physicians.

The aim and object of this brief paper is to rouse the members of the American Institute to a realization of the weight of responsibility which rests upon them in connection with this vital question of sanitary reform. You, gentlemen, are recreant to the duties you owe society if you do not make yourselves familiar with the whole subject, and do your best to disseminate correct views. You can speak as having authority, for this matter lies peculiarly within the physician's province. Do not hesitate to agitate the subject in the public prints. Brief and pointed articles will instruct and convince more rapidly, perhaps, than anything else. They should be plain and practical. The points at which we have hinted in preceding remarks may be carefully elaborated to suit each village or agricultural community.

"Knowledge is power" in more ways than one. The physician who carefully informs himself on the avoidable causes of disease, and who steps fearlessly to the front and instructs the community in which he resides, will, in the very nature of things, command the gratitude and respect of his neighbors, so true is it that the conscientious discharge of duty brings its own reward.

SECTION XIV.

REPORT

OF THE

BUREAU OF MICROSCOPY,

C. P. ALLING, M.D., ... Bradford, Pa.
J. D. BUCK, M.D., ... Cincinnati, O.
O. P. BAER, M.D., ... Richmond, Ind.
A. VARONA, M.D., ... New York.
SAM. A. JONES, M.D., ... Ann Arbor, Mich.

TO THE

THIRTY-FIRST SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 2

CONTENTS.

IV. The Analysis of Urinary Deposits, ... C. P. ALLING, M.D.

IV.

THE ANALYSIS OF URINARY DEPOSITS.

By C. P. Alling, M.D., Bradford, Penna.

The subject of analysis of urinary deposits does not receive from physicians the attention that its importance merits. When it is remembered that the entire amount of the solid portion of waste tissue is eliminated by the kidneys, and makes its exit from the body as effete product in the urine, it shall be readily seen that a careful examination of this excretion must give a valuable key to the location, nature and extent of any destructive process occurring within. Such is true in fact, and the diagnosis of many forms of disease may be accurately determined by analysis of the urine without further examination of the case. Some diseases, as oxaluria and Bright's disease of the kidneys can be recognized in no other way, at least in time to be of benefit to the patient.

The microscope furnishes the most easy and certain means of determining the various substances deposited in the urine. Thus, spermatozoa are recognized by their oval nuclei and elongated flagella; blood-discs by their circular and cup-shaped appearance; pus-globules and mucus-corpuscles by their spherical form and granular contents; chloride of sodium, oxalate of lime, ammoniaco-magnesian phosphates, and the like, by the size and shape of their crystals, etc. Without the instrument but little could be known of the distinctive forms of these various substances.

A thorough and complete analysis of the urine, however, re-

quires something other than simple examination with the glass. In order to precipitate the substance under consideration it is often necessary to treat the specimen with some suitable chemical reagent. Earthy phosphates being held in solution in acid urine, the addition of an alkali, as aqua ammonia, is required to obtain the precipitate. Addition of a mineral acid favors the precipitation of uric acid.

Many of the ingredients sought for in disease are also constituents of normal urine, and the value of the examination often rests upon the relative proportions in which they are found; hence the complete analysis requires a microscopical examination and also a chemical and quantitative analysis.

As being so intimately connected with the subject of microscopy proper, I ask your attention to a brief and practical consideration of this last, namely, quantitative analysis of the urine.

This examination is best accomplished by the volumetric method, or the method by *titration*, which depends upon the employment of certain solutions, the strength of which has been carefully ascertained, by aid of which other substances in solution may be accurately determined. The French make use of what are termed "normal "solutions, which are composed of the atomic weight of the reagent expressed in grams, dissolved in a liter of distilled water.

A very convenient plan, however, is to use what may be termed "standard solutions," the formulæ for which may be varied to suit the convenience of the manipulator. The best burettes are marked with a scale accurately graduated from 0 to 200 grains, and it is well, after selecting the reagent for testing any given substance, to make the solution of such strength that 200 grains shall neutralize or precipitate exactly one grain of the substance under examination.

Example.—Titration for uric acid: Use a solution of permanganate of potash containing 2.1 grains to 1000 grains of distilled water. Having precipitated the uric acid and set aside for crystalization and precipitation, pour off the supernatant fluid. Wash the crystals and redissolve in a solution of potash strongly acidulated with sulphuric acid. Place a beaker con-

taining the specimen thus prepared underneath the burette, filled to the 0 mark with the standard solution of permanganate of potash. Turn the stopcock and let a small quantity of the standard solution flow into the beaker. Immediately the color of the standard solution will be destroyed. Continue to add standard solution in small quantities; stir and observe if the color is removed after every addition. As soon as the uric acid is wholly taken up a slight pinkish color will remain. When this occurs, observe on the burette the exact amount of standard solution used. Every grain used represents $\frac{1}{200}$th grain of uric acid, and having noted the amount of urine first used, the ratio of uric acid in the specimen to that of normal urine can be readily computed.

In testing different substances, sometimes the color, sometimes the chemical reaction, and sometimes the precipitate are to be observed. If reliable standard solutions are used the results obtained by titration may be considered accurate enough for any and all purposes.

Another method of quantitative analysis used for some of the constituents of urine is known as approximate analysis. It is generally less accurate than by titration, but answers all practical purposes in most cases, and is performed with less trouble. It consists in filling the graduated test-tubes to the fluid ounce mark, adding the reagent, and after standing for twenty-four hours, observing the amount of precipitate as indicated in cubic centimeters by the graduated scale below. A little experience in testing different specimens gives a very good idea of any important variation from the normal standard. Tables may also be obtained for those who are unaccustomed to such examinations, that may serve in place of an extended personal experience, and give practical value to first efforts.

REPORT ON A COMPLETE CODE OF MEDICAL ETHICS.

THE undersigned, appointed by the American Institute of Homœopathy a Committee to "prepare a complete code of medical ethics," respectfully present the following as the result of their labors.

Considering it to be very desirable that the codes of ethics adopted by the various associations of the physicians of our country should be uniform in scope and arrangement, and as nearly identical in language as possible, the Committee have used the arrangement, and, to a great extent, the language of the Code adopted by the American Medical Association, and published in vol. xvi of their *Transactions* (for 1865), modifying it where changes seemed to be demanded by a proper regard for liberality and for justice, both to patient and to physician, or by a due concern for the freedom of medical education, opinion and action.

Respectfully submitted.

CARROLL DUNHAM, M.D.,
WALTER WILLIAMSON, M.D.,
A. S. BALL, M.D.,
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Committee on Medical Ethics.

CODE OF MEDICAL ETHICS.

SCOPE.

THE scope of a Code of Medical Ethics comprises the reciprocal duties and obligations of physicians and patients; the duties and obligations of physicians to each other; and the reciprocal duties and obligations of physicians and the public.

FUNDAMENTAL PRINCIPLES.

The great principles upon which Medical Ethics are based are these:

1. The great end and object of the physician's efforts should be: "the greatest good to the patient."
2. The rule of conduct of physician and patient, and of physicians towards each other, should be the GOLDEN RULE: "As ye would that men should do to you, do ye also to them likewise."

The various articles of the Code are only special applications of these great principles.

PART I.

RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND PATIENTS.

Article I. DUTIES OF PHYSICIANS TO PATIENTS.
" *II.* DUTIES OF PATIENTS TO THEIR PHYSICIANS.

PART II.

DUTIES AND OBLIGATIONS OF PHYSICIANS TO EACH OTHER.

Article I. DUTIES AS MEMBERS OF THE MEDICAL PROFESSION.
" *II.* PROFESSIONAL SERVICES TO EACH OTHER.
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RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THE PUBLIC.

Article I. DUTIES OF THE PROFESSION TO THE PUBLIC.
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PART I.

OF THE RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THEIR PATIENTS.

Article I.—Duties of the Physician to the Patient.

SECTION 1. The physician should hold himself in constant readiness to obey the calls of the sick. He should ever bear in mind the sacred character of his calling and the great responsibility which it involves, and should remember that the comfort, the health and the lives of his patients depend upon the skill, attention and faithfulness with which he performs his professional duties.

SECT. 2. The physician, in order that he may be able to exercise his vocation to the best advantage of the patient, should possess his respect and confidence. These must be acquired and retained by faithful attention to his malady, by indulgent tenderness towards the weaknesses incident to his condition, and by the exercise of a firm but kindly authority. The physician is bound to keep secret whatever he may either hear or observe, while in the discharge of his professional duties, respecting the private affairs of the patient or his family. And this obligation is not limited to the period during which the physician is in attendance on the patient. The patient should be made to feel that he has, in his physician, a friend who will guard his secrets with scrupulous honor and fidelity.

SECT. 3. The physician should visit his patient as often as may be necessary to enable him to acquire and keep a full knowledge of the nature, progress, changes and complications of the disease, and to do for the patient the utmost of good that he is able. But he should carefully avoid making unnecessary visits, lest he render the patient needlessly anxious about his case, or expose himself to the charge of being actuated by mercenary motives.

SECT. 4. The physician should not give expression to gloomy forebodings respecting the patient's disease, nor magnify the gravity of the case. Bearing in mind the almost infinite resources of nature, he should be cheerful and hopeful, both in mind and manner. This will enable him the better to exercise his faculties and apply his knowledge for the patient's benefit, and will inspire the patient with confidence, courage and fortitude, which are the physician's best moral adjuvants.

But it is the physician's duty to state the true nature and prospects of the case, from time to time, to some judicious friend or relative of the patient, and to keep this person fully informed of its changes and probable issue; and if the patient himself request the physician to disclose to him the nature and prognosis of his disease, it is his duty to state tenderly, but frankly, the whole truth,—provided the patient be of sound mind and strong enough to receive the disclosure without serious injury. The patient has a right to know the truth. If, moreover, facts within the physician's knowledge lead him to believe that it is of great importance, in relation to the patient's affairs, that he should be warned of the approach of death, it is the physician's duty to reveal to the patient's nearest friend, or to the patient himself, the true state of the case, and the importance of timely action.

SECT. 5. Whether the case proceed favorably, or become manifestly incurable, it is the physician's duty to continue his attendance faithfully and conscientiously so long as the patient may desire it. He is not justified in abandoning a case merely because he supposes it incurable.

SECT. 6. As the patient has an undoubted right to dismiss his physician for reasons satisfactory to himself, so, likewise, the physician may, with equal propriety, decline to attend patients, when his self-respect or dignity seem to him to require this step; as, for example, when they persistently refuse to comply with his directions.

SECT. 7. In difficult or protracted cases consultations are advisable. They tend to increase the knowledge, energy and confidence of the physician, and to maintain the courage of the patient. The physician should be ready to act upon any desire

which the patient may express for a consultation, even though he may not himself feel the need of it. Nothing is so likely to maintain the patient's confidence as alacrity in this respect. Moreover, such a course is but just to him, for he has an indisputable right to whatever aid or counsel he may think likely to be of service to him.

SECT. 8. The intimate relations into which the physician is brought with his patient give him opportunity to exercise a powerful moral influence over him. This should always be exerted to turn him from dangerous or vicious courses towards a temperate and virtuous life. The physician is sometimes called to assist in practices of questionable propriety, and even of a criminal character. Among these may be mentioned the pretence of disease, in order to evade services demanded by law, as jury or military duty; the concealment of organic disease or of morbid tendencies, in order to secure favorable rates of life-insurance, or for deception of other kinds; and especially the procurement of abortion when not necessary to save the life of the mother. To all such propositions, the physician should present an inflexible opposition. It is his duty, in an authoritative, but friendly manner, to explain and urge the nature, illegality and guilt of the proposed action, and to use every effort to dissuade from it, and to strengthen the patient's virtue and sense of right. The physician should be aware of the frequency of criminal abortion, and of the different methods employed for it, and should take every occasion to warn those who may be tempted to resort to it. In no case should the physician induce abortion, or premature labor, without a previous consultation with the most experienced practitioners attainable, nor without the most clear and imperative reasons.

Article II.—Duties and Obligations of Patients to their Physicians.

SECT. 1. Physicians are required, by the nature of their profession, to sacrifice comfort, ease and even health, for the sake of their patients. Patients should reflect upon this, and should understand and remember that they have corresponding duties and obligations towards their physicians.

SECT. 2. The patient should select a physician in whose

knowledge, skill and fidelity he can place implicit confidence; whose habits of life are regular and temperate, and whose character and demeanor are such that he can regard him as a personal friend. He must be able to confide in him freely. And the physician should not be changed for light reasons. A physician thoroughly acquainted with the constitutions, temperaments and tendencies of a family can the more successfully treat them.

SECT. 3. The patient should always consult his physician as early as possible after he has discovered that he is ill. A disease which is trifling at its onset may grow formidable through neglect, The physician should be regarded as a confidential adviser, who, on being early consulted, may prevent a sickness.

SECT. 4. The patient should faithfully and unreservedly state to his physician the supposed cause of his malady, and tell him everything that may have a bearing upon its nature. Since the physician is under the strongest obligations to secrecy, the patient should not allow considerations of delicacy, modesty or pride to prevent an entirely frank statement of his case, and candid and full replies to interrogatories.

SECT. 5. The patient should implicitly obey his physician's injunctions as regards diet, regimen and medical treatment. If he deviate from these directions, he cannot hold the physician to a full responsibility in the case; and, further, by a partial obedience he incurs some personal risk, since, in the treatment of diseases, all parts of the physician's advice are made to harmonize, and each is dependent on the others and may be unsafe without the coincidence of the others. Moreover, he does the physician an undeserved, and often a serious, wrong. If the patient have not sufficient confidence in his physician, and respect for him, to follow his directions, it were better for him frankly to say so, and to employ another in whom he can confide.

The patient should never allow himself, while under a physician's treatment, to take other medicines than those prescribed by him. He would, by so doing, incur a serious risk of taking medicines that are incompatible with each other. If desirous of trying any other mode of treatment, it would be much better frankly to state the fact to his physician, and ask his advice.

SECT. 6. The patient should, if possible, avoid receiving the friendly visits of a physician other than the one under whose charge he is. When he receives such visits, he should avoid conversation on the subject of his disease; for an accidental observation might give him false impressions respecting his disease, or destroy his confidence in the treatment he is pursuing. He should never send for a consulting physician without the express consent of his own medical attendant; for physicians can act together for the advantage of their patient only when they act harmoniously. Nor should he, by a secret appointment, constrain his medical attendant to meet another physician with whom he might not be willing to consult; but the patient has an undoubled right to have the opinion of any physician whom he may desire upon his case. His proper course is to request his medical attendant to arrange a consultation, and frankly state his desire for the physician whom he may prefer. If his medical attendant decline the consultation, it is then for the patient to determine whether he will insist, and thus dismiss his medical attendant, or whether he will defer to the judgment of his own physician. And the patient has a right thus to choose.

SECT. 7. If the patient wishes to dismiss his physician, he should, in justice and in common courtesy, state his reasons, and, if possible, in a friendly manner. To dispense with the services of a physician need not, of necessity, change the social relations of the parties.

SECT. 8. The patient should, when practicable, send for the physician in the morning, before his usual hour for leaving home. He will, by so doing, secure his earlier attendance, and will enable him the better to apportion his time so as to do justice to all his calls and engagements. He should call on his physician during his office hours only, and should avoid disturbing him in hours devoted to meals, rest and sleep. And in receiving his physician's visits, he should avoid compelling him to wait, even a few minutes. The aggregate of petty detentions, while the patient is making some needless preparation to receive the physician, amounts to a serious waste of valuable time.

PART II.

OF THE DUTIES AND OBLIGATIONS OF PHYSICIANS TO THE PROFESSION AND TO EACH OTHER.

Article I.—Duties to the Profession.

SECTION I. Inasmuch as every member of the medical profession partakes of the honor in which it is held, and is entitled to its privileges and immunities and profits by the scientific labors of his predecessors and associates, it is his duty faithfully to endeavor, in his turn, to elevate the position of the profession and, by every honorable exertion, to enrich the science of medicine.

SECT. 2. In no other profession should a higher standard of morality and greater purity of personal character be required. Physicians ought to come up to this standard, and do what they may to exalt it. As the practice of medicine requires the constant exercise of a vigorous and clear understanding, and as the practitioner should be, at all times, ready for emergencies in which the welfare and even the life of a fellow-creature may depend upon his steady hand, acute eye and unclouded brain, it is incumbent upon the physician to be temperate in all things.

SECT. 3. The physician should not resort to public advertisements or private cards or handbills, inviting the attention of persons affected by particular diseases or publicly offering advice and medicine to the poor *gratis*, or promising radical cures. Neither should he publish cases or operations in the daily prints, nor invite laymen to be present at operations, nor solicit or exhibit certificates of skill and success, nor perform any similar act.

SECT. 4. It is equally derogatory to professional character for a physician to hold a patent for any nostrum or any surgical instrument or appliance, or to keep secret the nature or composition of any medicine used by him. Such restriction or concealment is inconsistent with the beneficence and liberality which

should characterize the medical profession. But it is the duty of the physician to avail himself of every opportunity to observe the action and study the properties of new or secret remedies and new processes of preparing medicines as well as new modes of treating diseases, and to subject them to the analysis of scientific investigation. For the physician should always bear in mind that the great object of his profession is to cure the sick, and that it is not only admissible, but is his solemn duty to investigate thoroughly and without prejudice, whatever offers any probability of adding to his knowledge of the art and means of curing, and of thus enriching the science of medicine.

Article II.—Professional Services of Physicians to each other.

SECT. 1. All practitioners of medicine, their wives, and children while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them. Physicians, when ill, are incompetent to prescribe for themselves. The natural anxiety and solicitude which they feel for members of their own family when ill, tend to obscure their professional judgment and make it difficult to treat them. Under these circumstances physicians are peculiarly dependent on each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. But visits should not be obtruded, officiously or unasked, upon a sick physician.

If, however, a physician in affluent circumstances, request the attendance of a distant professional brother, and offer an *honorarium*, it is not proper to decline it; for one should not, even from a kindly motive, impose upon another a pecuniary obligation which the recipient would not wish to incur.

If a physician is called from any considerable distance, the expense of travel, etc., thereby incurred, should always be paid by the physician receiving the visit; and an *honorarium* may be tendered if much time is consumed in making the visit.

Article III.—Duties of Physicians as regards Vicarious Offices.

SECT. 1. Attention to his personal affairs, the pursuit of health, and the various contingencies to which the physician is peculiarly exposed, sometimes compel him temporarily to withdraw

from his duties to his patients, and to request some of his professional brethren to discharge them for him. Compliance with such a request is an act of courtesy which should always be performed with the utmost consideration for the interests and character of the physician relieved. And when this is done for a short period only, all the pecuniary obligations for such services should belong to him. But if a physician neglect his business in quest of amusement and pleasure, he is not entitled to the frequent and long-continued exercise of this fraternal courtesy without conceding to the physician who acts for him the fees accruing from the duties discharged by the latter.

SECT. 2. Obstetrical and surgical cases involve unusual fatigue and responsibility, and it is just that the fees accruing therefrom should belong to the physician who attends them.

Article IV.—Duties of Physicians in regard to Consultations.

SECT. 1. A complete medical education, of which the diploma of a medical college is the formal voucher, furnishes the only presumptive evidence of professional acquirements and abilities. But the annals of the profession contain the names of some who, not having the advantage of a complete medical education, became, nevertheless, through their own exertions and abilities, brilliant scholars and successful practitioners. A practitioner, therefore, whatever his credentials may be, who enjoys a good moral and professional standing in the community, should not be excluded from fellowship, nor his aid rejected, when it is desired by the patient in consultation. No difference in views on subjects of medical principles or practice should be allowed to influence a physician against consenting to a consultation with a fellow-practitioner. The very object of a consultation is to bring together those who may, perhaps, differ in their views of the disease and its appropriate treatment, in the hope that, from a comparison of different views, may be derived a just estimate of the disease and a successful course of treatment.

No tests of orthodoxy in medical practice should be applied to limit the freedom of consultations. Medicine is a progressive science. Its history shows that what is heresy in one century may and probably will be orthodoxy in the next. No greater

misfortune can befall the medical profession than the action of an influential association or academy establishing a creed or standard of orthodoxy or "regularity." It will be fatal to freedom and progress in opinion and practice. On the other hand, nothing will so stimulate the healthy growth of the profession, both in scientific strength and in the honorable estimation of the public, as the universal and sincere adoption of a platform which shall recognize and guarantee:

1. A truly fraternal good-will and fellowship among all who devote themselves to the care of the sick.

2. A thorough and complete knowledge, however obtained, of all the direct and collateral branches of medical science,—as it exists in all sects and schools of medicine,—as the essential qualification of a physician.

3. Perfect freedom of opinion and practice, as the unquestionable prerogative of the practitioner, who is the sole judge of what is the best mode of treatment in each case of sickness intrusted to his care.

The physician may, with propriety, decline to meet a practitioner of whose inimical feelings towards himself or of whose general unfairness in consultations he is satisfied. But in such a case he should explain to the patient his reasons; and if the patient desire the opinion of the practitioner objected to, the family physician may withdraw from the case and allow the other to be sent for. But in justice to the latter the state of affairs should be explained to him at the time he is requested to visit the patient.

SECT. 2. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together; and this is generally practicable, for society allows the plea of professional engagements to excuse the neglect of all others, and to be a valid reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period of time, after which the consultation should be considered postponed to a new appointment. If it be the attending physician who is present, he will, of course, see the patient and prescribe; but if it be the consulting physician, he should retire without seeing the patient,

except in cases of emergency, or when he has been called from a considerable distance, in which case he may examine the patient, and give his opinion in writing and under seal, to be delivered to the attending physician.

SECT. 3. In consultations no rivalry or jealousy should be indulged in. Candor, probity, and all due respect should be exercised towards the physician in charge of the case. If the consulting physician cannot agree with him respecting the nature and proper treatment of the case, the physicians should state this fact to the patient or his nearest friend, both physicians being present at the time, and should request him to select the one in whom he has most confidence. But if they agree sufficiently to take joint charge of the case, then the consulting physician must justify and uphold, so far as he can conscientiously do so, the practice of his associate, and must abstain from any hints, insinuations or actions which might in any way impair the confidence which the patient reposes in him, or affect his reputation. He must refrain from any extraordinary attentions or assiduities calculated to ingratiate himself in the patient's favor and to supplant his associate.

SECT. 4. In consultations the attending physician should first put the necessary questions to the patient. After this, the consulting physician should make such additional inquiries and examinations as may be needed to satisfy him of the true nature of the case. But he should avoid making a parade of examining the patient more thoroughly than had been done before; rather suggesting to the attending physician, where this is possible, to make whatever examinations he desires, than making them himself. Both physicians should then retire to a private room for deliberation.

SECT. 5. In consultations the attending physician should deliver his opinion first; and, when there are several consulting physicians, they should express their opinions in the order in which they have been called in. Should an irreconcilable diversity of opinion occur, when more than two physicians meet in consultation, the opinion of the majority should be regarded as decisive; but if the number be equal on each side, the decision should rest with the attending physician. If two physicians, in consul-

tation, cannot agree, they should call in a third to act as umpire. If this be not practicable, the patient must be requested to select the physician in whom he is most willing to confide. The physician who is left in the minority should, without any ill feeling, retire from the consultation and from any farther participation in the management of the case; and, in justice to the physician thus retiring, the fact of his difference from his associates should, in the presence of all the physicians attending, be explained to the patient as his reason for withdrawing from the case.

SECT. 6. The attending physician should communicate to the patient or his friends the directions agreed upon in the consultation, as well as any opinion which it may be thought proper to express. But no statement or discussion should take place before the patient or his friends, except in the presence of all the physicians attending, and by their common consent. And no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence. No decision arrived at in a consultation is to be regarded as restraining the attending physician from making such variations in the treatment as any subsequent change in the case may demand. But such variation and the reasons for it ought to be carefully noted at the time, and detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician, if he is sent for in an emergency when the attending physician is out of the way; and similar explanations must be made by him at the next meeting.

SECT. 7. Sometimes a special consultation is desirable in cases in which the continued attendance of two physicians might be objectionable to the patient. The consulting physician, in such a case, should sedulously avoid all further unsolicited attendance. Such consultations require an extraordinary outlay of time and attention, and at least a *double honorarium* may be reasonably expected.

SECT. 8. The consulting physician cannot, with propriety, take exclusive charge, at any time, of the patient in whose case he has been called in consultation, without the consent of the attending physician, except in cases provided for by the third

sentence of section 3, and by the fourth sentence of section 5, of this article.

Article V.—Duties of Physicians in cases of Interference.

SECT. 1. Medicine is a liberal profession, and those admitted into its ranks should base their expectations of success upon the extent of their qualifications, not upon intrigue or artifice. A physician should not allow himself to feel envious or jealous of a brother-practitioner. The distinction which one successful physician wins is shared by the whole profession. Nor should a physician suffer himself to feel ill-will towards another who may come into his neighborhood and appears likely to take a share of the business which he has hitherto enjoyed. Such feelings are inconsistent with the beneficent and liberal nature of the profession. Liberality, and true generous fraternity in thought, word and deed, will unite the interests of all the members of the profession, and will so exalt the estimation in which it is held in the community that, confidence being increased, business will likewise increase; and to physicians will be accorded the position which, of right, should be theirs: that of confidential family advisers in all matters pertaining to the care of the body in health, no less than in sickness.

SECT. 2. The physician, in his intercourse with a patient who is under the care of another practitioner, should observe the strictest caution and reserve. No meddling questions should be asked in any interview for business or friendship, no disingenuous hints thrown out relating to the nature and treatment of his disorder; nor should the patient be allowed to converse upon these topics. No course of conduct should be pursued which might, directly or indirectly, tend to diminish the trust reposed in the physician employed.

SECT. 3. A physician should not take charge of a patient who is, or has recently been, under the charge of another practitioner in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or has been regularly notified that his services are no longer required. Under such circumstances no unjust or illiberal remarks should be made or insinua-

tions thrown out in relation to the treatment pursued by the previous physician. Nor should the physician permit the patient unreasonably to find fault with his predecessor. For patients often become dissatisfied with their attendant on account of the mere duration of a case which no degree of professional knowledge or skill could have shortened.

SECT. 4. In cases of accident or sudden emergency, one or more physicians are often sent for by alarmed friends. Courtesy should assign the patient to the first of these that arrives; and he should select from those present such additional assistance as he may deem necessary. But he should also request the family physician (if there be one) to be sent for, and, on his arrival, resign the case into his hands. The practitioner of the patient, when he arrives, should take the place of any one called in his absence. "The practitioner of any patient" is the man whom he has in any way given to understand that he regards him as his medical adviser, or who would now be in charge of the case were it not for his absence, sickness or other disability.

SECT. 5. In a sparse population, a physician when visiting a sick person may be desired to see, in an emergency, a neighboring patient, who is under the regular charge of another physician. The conduct to be pursued on such an occasion is: to give advice adapted to present circumstances; to interfere as little as possible with the general plan of treatment; to assume no farther direction of the case unless it be expressly desired; and, in the latter case, to request an immediate consultation with the practitioner previously employed.

SECT. 6. A wealthy physician should not give advice *gratis* to the affluent, because his so doing is an injury to his professional brethren. The office of the physician can never be supported as an exclusively beneficent one; and it is defrauding, in some degree, the common fund, when fees are dispensed with which might justly be claimed.

SECT. 7. When a physician who has been engaged to attend a case of midwifery is absent and another is sent for, if delivery is accomplished in the absence of the former, the latter is entitled to the fee, but he should resign the patient to the practitioner first engaged.

Article VI.—Of Differences between Physicians.

SECT. 1. Diversity of opinion and opposition of interests may, in the medical, as in other professions, sometimes occasion controversy and even contention. When such cases occur and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a *court-medical.*

Article VII.—Of Pecuniary Acknowledgments.

SECT. 1. Some general rules should be adopted by the physicians in every town or district, relative to pecuniary acknowledgments from patients. These should be adhered to by physicians as uniformly as circumstances will permit. They serve, likewise, as a standard to which appeal may be taken in cases of doubt or dispute.

SECT. 2. Members of the medical profession have been so uniformly in the habit of attending, gratuitously, the indigent sick, and, in general, of answering every call promptly and without a question as to whether they are to receive remuneration therefor, that many persons seem to think they have a right to demand the services of physicians; and do, in fact, call upon them freely, and neglect or refuse to render any pecuniary equivalent, although abundantly able to do so. They impose upon one physician, in this way, until they have exhausted his patience, and then call upon another; and thus, in the course of a few years, make the circuit of the profession in their neighborhood. It is proper for the physicians of a community to make a list of the names of such individuals, and to demand, before visiting those whose names are on it, adequate security that their *honorarium* will be paid.

PART III.

THE RECIPROCAL DUTIES AND OBLIGATIONS OF PHYSICIANS AND THE PUBLIC.

Article I.—Duties of Physicians to the Public.

SECTION 1. As good citizens, it is the duty of physicians to be vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens. They should be always ready to give counsel to the public, in relation to matters appertaining to their profession; as, for example, on subjects of medical police, public hygiene and legal medicine. It is their province to enlighten the public in regard to quarantine regulations, the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; in relation to the medical police of towns, drainage, ventilation, etc., and in regard to measures for the prevention of epidemic and contagious diseases. And, when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of suffering, and the saving of life, even at the risk of their own lives.

SECT. 2. Physicians should always be ready, when called on by the proper authorities, to enlighten coroners' inquests and courts of justice on matters strictly medical, such as involve questions relating to insanity, legitimacy, or sudden and violent deaths, and in regard to the various other subjects embraced in the science of medical jurisprudence. But, in these cases, and especially where they are required to make post-mortem examinations, it is just and right, in consequence of the time, labor and skill required, and the responsibility and risk they incur, that the public should award them more than a mere consulting fee.

SECT. 3. There is no profession, by the members of which eleemosynary services are more freely dispensed than they are

by physicians; but justice demands that some limits should be placed to the claims upon such offices at their hands. Poverty, professional brotherhood, the benevolent and scantily remunerated occupation of the individual patient, and certain of the public duties referred to in Section 1 of this Article, should always be recognized as presenting valid claims for gratuitous services. But neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, or perform military duty, or to certify to the state of health of parties wishing to insure their lives, obtain pensions or the like, without a pecuniary acknowledgment. But to indigent persons such professional services should always be cheerfully and freely accorded.

Article II.—Obligations of the Public to Physicians.

SECT. 1. The benefit accruing to the public, directly and indirectly, from the active and constant labors and beneficence of the medical profession are so numerous and important, that physicians are justly entitled to the utmost consideration from the community. The public ought, likewise, to entertain a just appreciation of the proper qualifications of a practitioner of medicine; to make a due discrimination between true science and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education, and not to allow the provisions of their statute-books or of the prospectus of their chartered institutions to interpose any obstacles to the attainment of the fullest knowledge of every branch of medical science, or, in any way, to restrain the most entire freedom of thought, investigation and action in matters appertaining to the practice of medicine.